The Orchadian

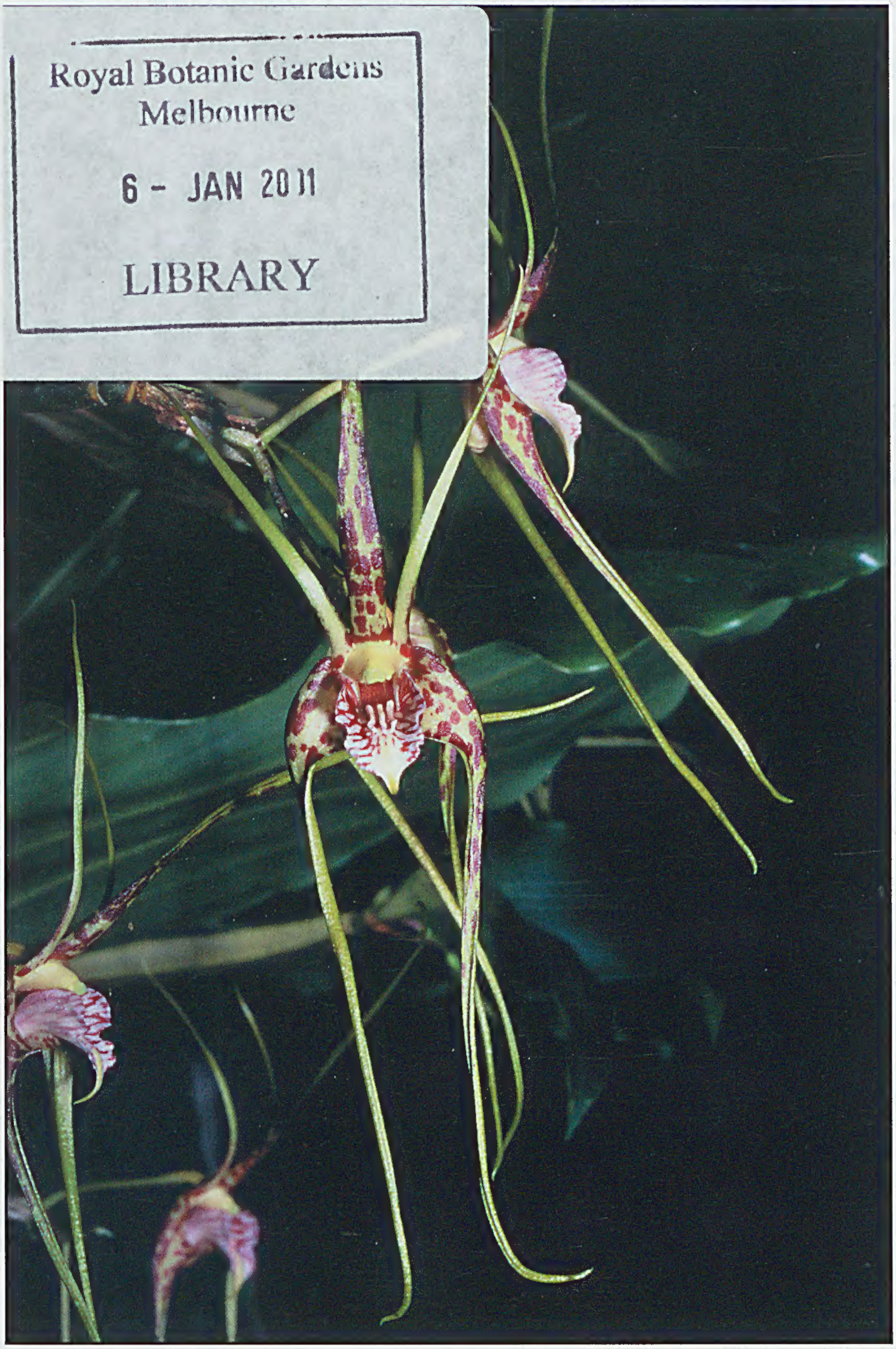
Volume 16, Number 10 www.anos.org.au December 2010

Official Journal of the Australasian Native Orchid Society

Royal Botanic Gardens
Melbourne

6 - JAN 2011

LIBRARY



Dendrobium tetragonum var. *giganteum* from Iron Range

The Orchadian

Official Journal of The Australasian Native Orchid Society Inc.
Founded August 1963

www.anos.org.au
Dedicated to the Study and Conservation of Australasian Native Orchids
Print Post Approved PP239628/00002, ISBN 0474-3342

Patrons: David Cannon & Walter T. Upton OAM
December 2010 Volume 16 Number 10

CONTENTS

Features

Geelong Group ANOS Annual Show .... Frances Wilde 436
Editorial .... Ian Chalmers 438
6th ANOS Conference Show Report .... Peter Denning 439
RHS Registrations of Australian Hybrids 442
President's Report .... Rick Winch 443
Publications from the AOF .... Nette Magetto 444
A Broad Look at Dendrobium .... A. Schuiteman and P.B. Adams 447
Orchids and Travel in P.N.G., Bali & Sulawesi 2009 .... Phil Ritchie 460
Additions to the Orchid Flora of the Solomons .... Paul Ormerod 465
Losing The Plot .... Alan W. Stephenson 472
Progress with *Dendrobium speciosum* Varieties Register .... Ros Capell 473
Translocation Or Death .... Alan W. Stephenson 475

Photographs

Dendrobium tetragonum var. *giganteum* from Iron Range .... Front Cover
Don Bradshaw 436
Dendrobium kingianum 437
Sarcochillus Fitzhart 'Bleeding Hart' 437
Dendrobium speciosum 'Denbra' 440
Diuris maculata 440
Dendrobium Jayden 'Greta' AD/AOC-ANOS 2010 440
Dendrobium [*Flickingeria*] *durum* 449
Dendrobium [*Cadetia*] *triquetrum* 449
Dendrobium [*Diplocaulobium*] *nitidissimum* 449
Dendrobium [*Fugacia*] *lacteum* 452
Dendrobium gratiosissimum 452
Dendrobium tetragonum var. *giganteum* from Conway Range 453
Dendrobium tetragonum var. *giganteum* from Iron Range 453
Dendrobium tetragonum var. *giganteum* from Iron Range 456
Dendrobium tetragonum var. *giganteum* from McIvor River 456
Dendrobium tetragonum var. *giganteum* from McIlwraith Range 456
Dendrobium tetragonum var. *giganteum* from Windsor Tableland 456
Dendrobium tetragonum var. *giganteum* from Iron Range 457
Ambua Lodge (2100m) 460
Pedilochilus sp. 460
Tribal Performance (Sing Sing) 461
Bulbophyllum fletcherianum 461
Dendrobium habbenense 461
Dendrobium pseudoglomeratum 461
Bulbophyllum sp. 464
Pterostylis saxicola 473
Thelychiton speciosus [*Dendrobium speciosum*] 473
Calochilus pulchellus habitat prior to relocation 476
Calochilus pulchellus habitat reloaction site 476
Calochilus pulchellus 477
Calochilus pulchellus habitat 3 years after relocation 477
Thelychiton falcorostrus [*Dendrobium falcorostrum*] 480
Dendrobium cuthbertsonii 480

COUNCIL OF ANOS Inc.
President: Rick Winch
Vice-President: Tony Clarke
Secretary: **TBA**
Treasurer: Robert Murch
Past President: Graham Slater

ANOS Councilors:
Roslyn Capell
Trevor Porteous
Peter Kiernan
Mike Fish
TBA
TBA

Royal Botanic Gardens
Melbourne
6 - JAN 2011
LIBRARY

National Registrar of Judges
John Creeggan -

Editor, *The Orchadian*:
Ian Chalmers
25 Turriell Point Road
Lilli Pilli NSW 2229.
Email: orchedit@optusnet.com.au
or ichalmers@optusnet.com.au

Membership Officer:
Ian Chalmers
All membership enquires should be directed to Robert Murch.

Conservation Officer:
Alan Stephenson: affine@tpg.com.au

ANOS CORRESPONDENCE:
A.N.O.S. Inc. P.O. Box 318,
Willoughby, N.S.W. 2068

ARTICLES:
Items for consideration may be submitted to the Editor on disk or via e-mail using Microsoft Word.
Good quality sharp colour slides, prints or illustrations may be submitted with articles. 5 Mp digital photos can also be submitted. All efforts will be made to return images after publication.

Front cover Dendrobium tetragonum var. *giganteum* from Iron Range -- Photographer P. Adams.

COPYRIGHT:
Material in *The Orchadian* is subject to copyright and may not be reproduced without permission from the author.

SUBSCRIPTION RATES (AUD$)
$50 Australia
$60 Asia/Pacific
$70 Other Countries

Regional Registrars	
Queensland	Trevor Porteous
N.S.W.	Jim Lykos
South Australia	Les Nesbit
Western Australia	Phil Bunney

Ira Butler Chair Peter Weston

Web Masters Graeme Bradburn
& Peter Eygelshoven

ORCHIDACEOUS BOOKS

Specialist supplier of fine orchid literature

Large selection of new and
pre-owned titles available.
Browse our website at your leisure
www.orchidaceousbooks.com.au
or send for our catalogue.

Graham and Margaret Muller
PO Box 4192, Tinana, QLD, 4850
Phone 07 4122 1251 Fax 07 4122 4539

Email: books@orchidaceousbooks.com.au

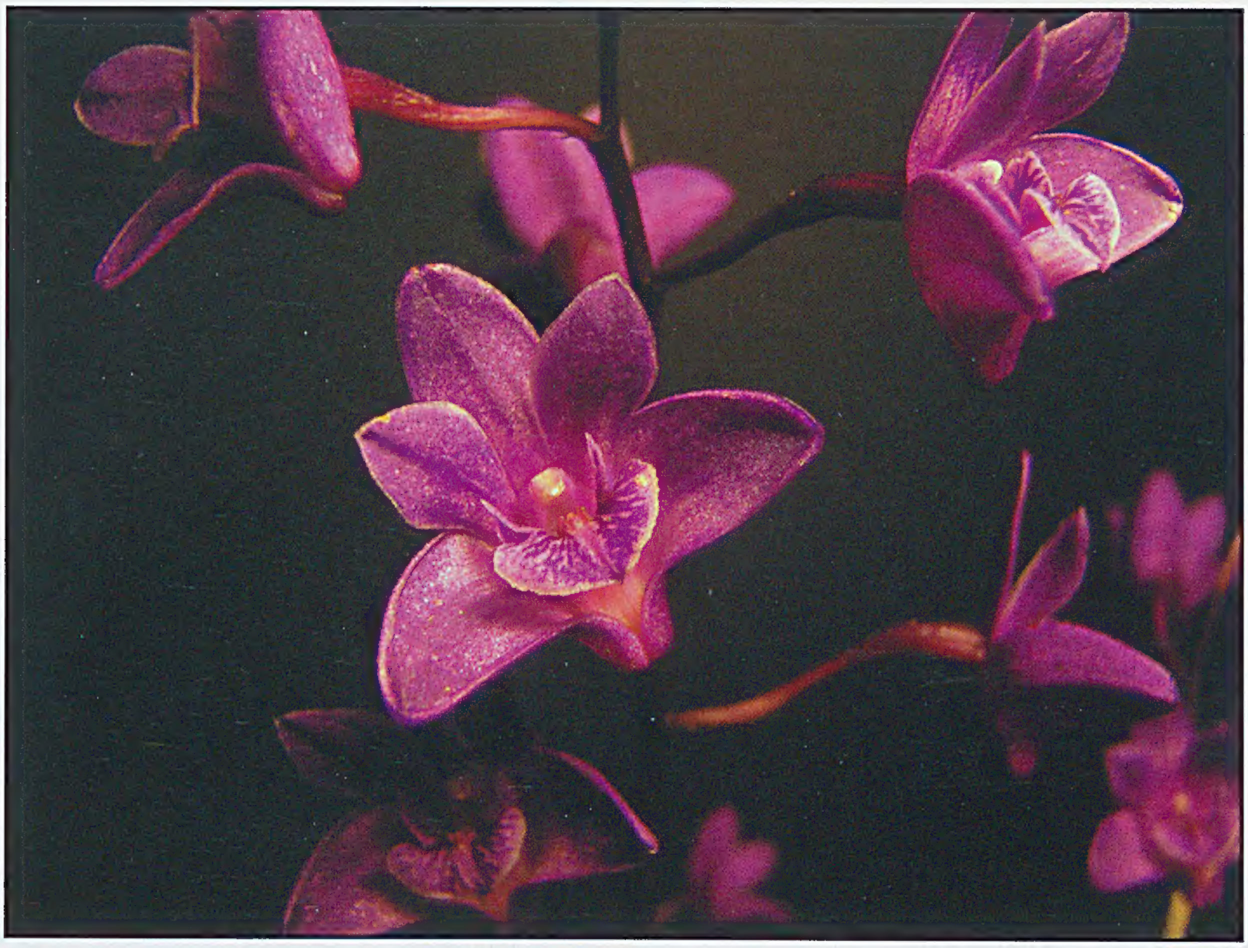
Advertising Costs Per Four Issues, June - March.
1/6 page $120.00
1/4 page $160.00
1/2 page $300.00
Space is available, please contact the Treasurer for further information
PO Box 318, Willoughby, NSW 2068
or through the web site
www.anos.org.au

AUSTRALASIAN NATIVE ORCHID SOCIETY
Geelong Group Inc.
ANNUAL SHOW 2010

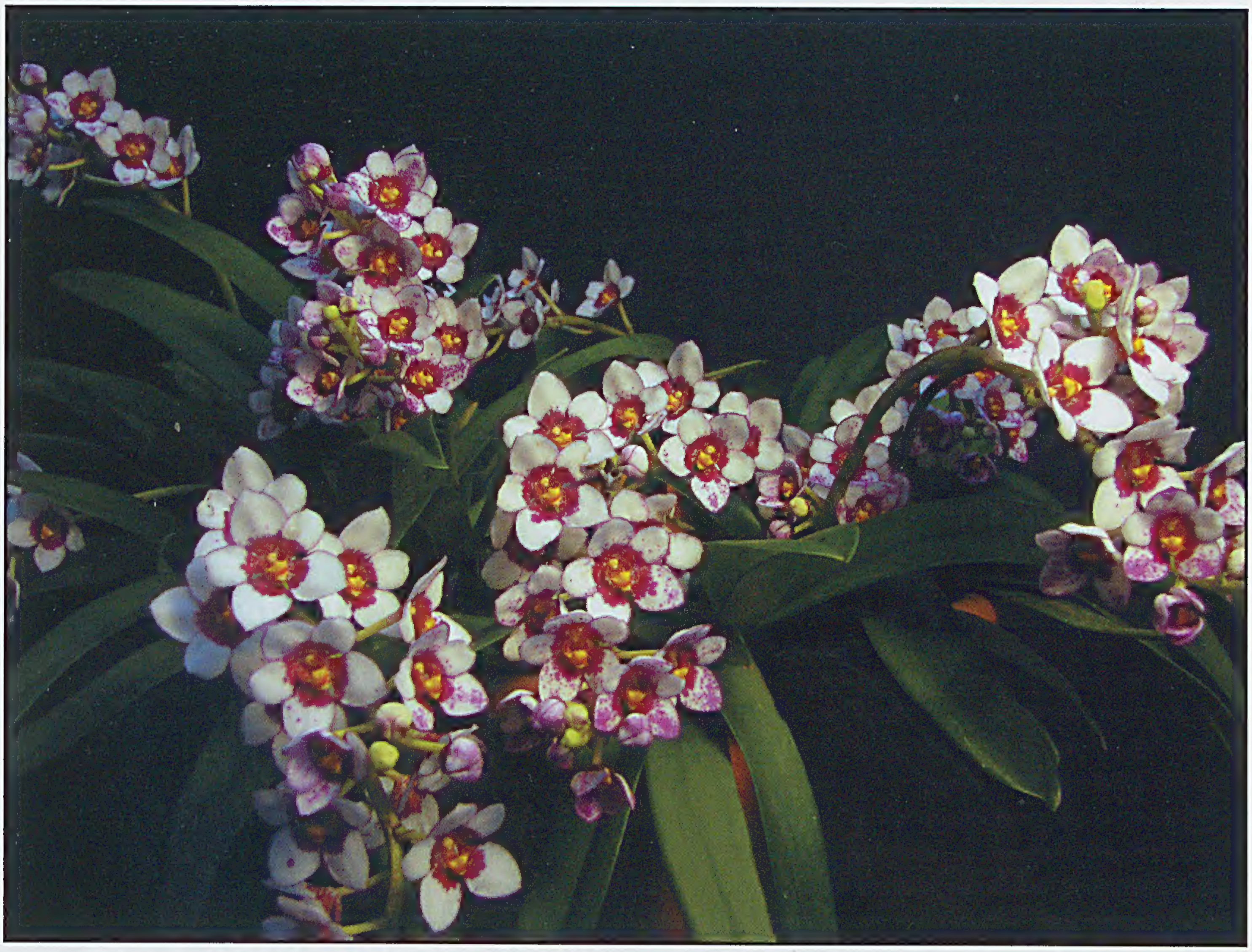
It was with trepidation we set up our annual show this year. At our meeting in October everyone said their flowers were not coming out. Our annual show is usually is mainly an exhibition of *Sarcochilus*, but not this year.

For the first time that I can remember as well as our usual display of Sarcs we had a brilliant display of Aussie *Dendrobium* and our Grand Champion Orchid of the Show was ……..wait for it, *Dendrobium kingianum*, yes you heard right. A plant with about 6 canes, 3 of which were flowering, the flowers were sitting just right, a lovely dark red/purple

Don Bradshaw recieving the Grand Champion Shield



Dendrobium kingianum Grand Champion



Sarcochilus Fitzhart 'Bleeding Hart'

colour and no one could say it wasn't worthy of this award.

The owner of this was one of our members Don Bradshaw who usually puts in a very nice *Sarcochilus* good enough to win but this time he was lucky enough to have this *Dendrobium kingianum* out.

Our weather this winter has been different, I often say this, but this year it was true, very cold nights followed by cold days that kept the flowers tightly closed until the last week when we had a few very sunny and warmer days.

Even the *Sarcochilus* stayed closed making everyone have second thought that they would have anything out, but along came 220 exhibits and we couldn't have been more pleased.

One of our foundation members Lorraine Fagg brought in her *Sarco.* Fitzhart "Bleeding Hart" that received Reserve Champion of the show. It was especially nice this year as it had been repotted into two and looked fabulous, plus the other half received 2nd in the *Sarcochilus* Fitzhart class.

There were lots of little seedlings flowering for the first time and it was one of these that received a first prize for our first time entrant John Haniver who exhibited in the Novice section.

We had a good selection of *Dockrillia* or are we going to revert to *Dendrobium*, I am always at a loss as to what to call them lately, these were also flowering a bit later this year.

Thanks to all members who participated and helped over this weekend of 6th & 7th November, your committee appreciates your commitment.

Frances Wilde (Show convenor)

ORCHIDMATE Coconut Husk Chips

CREATING A NEW STANDARD FOR ORCHID GROWING MEDIA

- Guarantees Ph and Salt levels ideal for growing Orchids.
- Has no unwanted fines, sold graded to specific sizes.
- Is ready to use without further washing or additives.

Developed by Aussie orchid growers specially for use in Aussie conditions

Use only ORCHIDMATEtm the market leader

Available from

EASY ORCHIDS

(02) 6682 2635

sales@easyorchids.com

www.easyorchids.com

6th Australasian Native Orchid Society Conference & Show – Newcastle 2010 (25th – 29th August)

Peter Denning
Secretary
6th ANOS Conference & Show

Organising Committee
Back in 2008 ANOS – Newcastle Group was approached by ANOS Inc. Council and asked if they would consider hosting the 6th ANOS Conference & Show in 2010. At that month's club general meeting the go ahead was given by the members. It was a big ask with only two years to stage the event. An organising committee was formed shortly after, at our 2008 Spring Show. So began the challenge of planning the event. Long nights and many a committee meeting that gained in frequency as the event drew near followed.

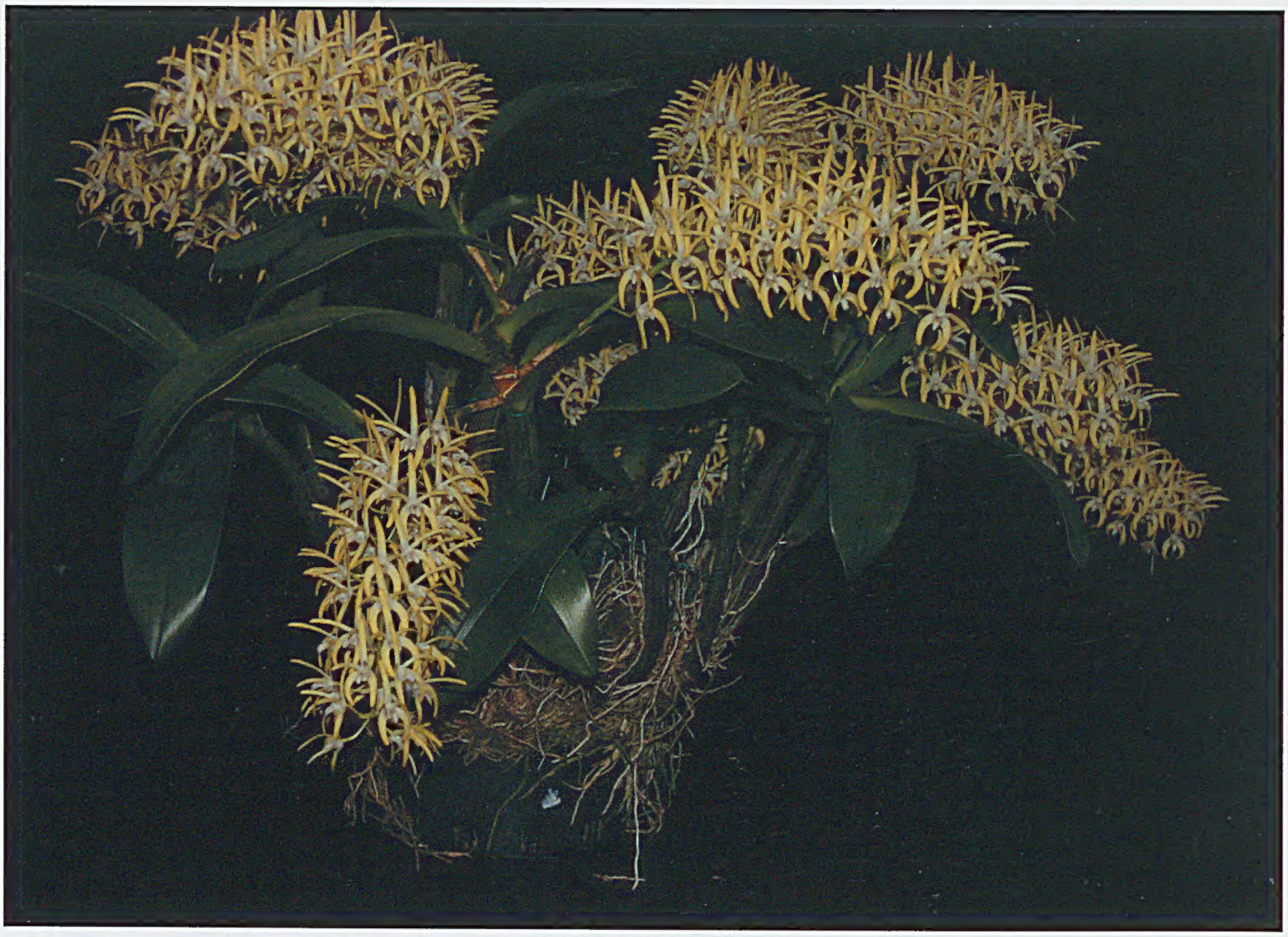
The venue, Club Panthers Newcastle was chosen for a number of reasons. Firstly, its location to public transport within the inner city of Newcastle. Secondly, the layout. Having the speaker room, show and vendor areas on the one level and in close proximity benefitted all concerned. Thirdly, the Club Panther's staff were so friendly and supportive of this event. This alone went a long way to ensuring its success.

One of the real challenges faced by the committee was the raising of the funds needed to host such an event. We could not have achieved this without the help of our silent achievers, such as, Brian and Phena Gerhard (DUNO). Their support over the last two years has been nothing but one of commitment. The number and quality of plants donated for the initial auction really set the committee on the front foot. There are just too many people to thank individually for this. Auctions, raffles, sausage sizzles and donations you mention it we probably did it. It all added up. Given the global financial crisis at the time, the donations received from societies, businesses and individuals took a huge burden off the committee in securing enough funds to cover the prize money.

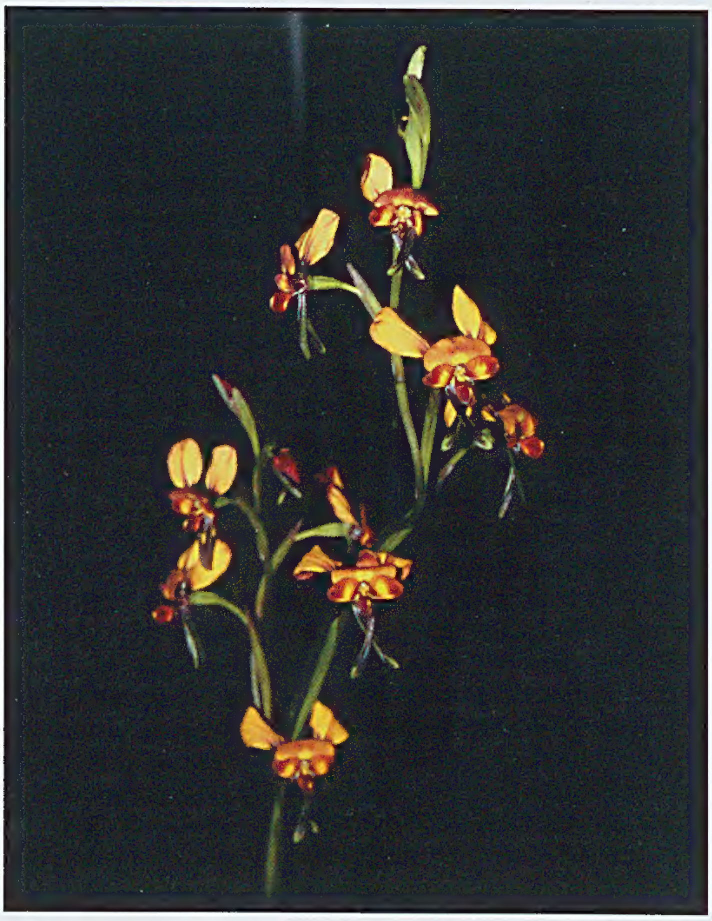
The success of the conference & show would not have been achieved without the response we received from the various orchid societies, the vendors, the speakers and alike to participate. Seven ANOS Societies participated, fourteen vendors from NSW, Victoria, Queensland and South Australia took part and twelve speakers including our international speaker Mr Fred Clarke (USA) presented their topic of choice over the three days.

Set up day (25th August) was a very busy day for all with the Show Co-ordinator, Sandra Radford and her assistant, husband Phil, Show Marshal Don Cruickshanks, Show Registrar Fred Fear and his wife Margaret being kept busy all day. The movement of materials and plants into the venue by all via the loading dock was well controlled by our person in control of this area Tony Clarke.

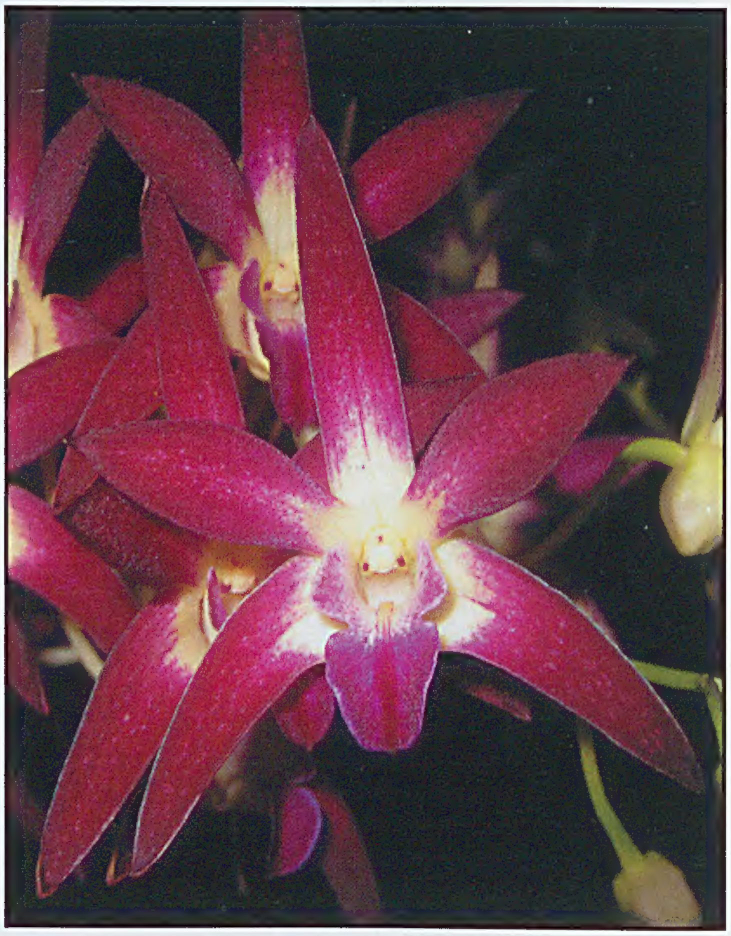
There were six floor displays of different design and themes, seven table top displays that were just full of colour and one cut flower display. These were complimented by the orchids benched on the "composite" tables that surrounded the floor and table top displays. This presented upon entering the show area a wonderful sight of colour with the perfume of the orchids filling



Dendrobium speciosum 'Denbra' Photo Ian Chalmers



Diuris maculata Owner A Dash
Photo Ian Chalmers



Dendrobium Jayden 'Greta'
Owner Don Cruickshanks
Photo Ian Chalmers

the auditorium, at times being a little over powering for some. As one walked around you really appreciated the time, the planning and the effort that had gone into putting each display together. When I saw a guitar and a mock piano being used as props I thought, what do these musical instruments have to do with orchids? Are they going to serenade the judges? Then it hit me. Yes of course, the "*Dendrobium Jazz 'Tumbi' Band*". All jokes aside the organising committee appreciate the time and effort put in by each of the societies and individuals that participated.

Judging (26th August) was another busy day for all involved. Approximately twelve hundred orchids were presented of which five hundred and sixty seven were nominated for judging. We the organising committee would like to take this opportunity to thank all the judges who attended and to those societies whose members brought plants along for without them there would have been no show. We would also like to thank Irene Bodell for her assistance in preparing the show schedule. The Cocktail Party at the end of day two was a welcome breather for all involved. The show was officially opened at the Cocktail Party by the City of Newcastle Lord Mayor John Tate and his wife.

The bus trip organised for day two to Port Stephens to see a variety of orchids growing in situ was well received. I'm led to believe a few of our Victorian friends actually waded through the swamp to take photos of *Dockrillia teretefolia* growing on the swamp oaks. Now that's a love of epiphytes for you and wet shoes for the rest of the conference.

The conference banquet was held on the Saturday night (28th August) on the main floor of the venue, which was bordered on three sides by orchid displays and those orchids benched on the composite tables. Speeches were kept to a minimum with all champion prizes being presented. During the dinner a series of auctions took place of mostly native orchids. A flowering seedling sold for almost one hundred dollars whilst a large pot of *Dendrobium speciosum* 'Uluru' *sold* for almost five hundred and fifty dollars. A special thank you to Peter & Betty Presland who donated a prize of a week for two at Betty's Lodge & Trout Farm in the PNG Highlands valued at $6000. A wonderful and kind donation that set the auction alive when bidding commenced.

In excess of eleven hundred people came through the doors during the three days the show was opened to the public. Many vendors were surprised by the number of people who came through the doors on the last day, Sunday, as neither the organising committee nor Club Panthers were expecting the response we got from either the orchid enthusiast nor that of the general public, undoubtedly our advertising campaign and promotion of the event during the last two years paid dividends.

Many comments and accolades have followed from, well organised, had a great time, magnificent to simply the best ever. Hearing these comments from persons known and from total strangers makes the past two years all worthwhile. We simply say *thank you* to those who participated, to those who simply came to look. We hope you enjoyed yourself, we hope you made many new friends and got to see some old acquaintances. The conference and show for the organising committee and ANOS Newcastle Group was a huge success. Yes we had our teething problems in a number of areas. We can only learn from our mistakes and hopefully the next conference & show will even be better. Finally the organising committee would like to thank our volunteers for their assistance and dedication. It took fifteen volunteers each day to assist in the running of the conference & show.

Grand Champion of the Show - *Dendrobium speciosum* 'Denbra' ('GF' x 'Glenn') - bred by John Andrews (ANOS – Central Coast). The 'GF' being a Reg Burns *grandiflorum* and 'Glenn' a variety *speciosum* collected from the Watagans many years ago (Owned by Peter & Christina Denning).
Briefly Christina & I would like to thank the judges. This is undoubtedly the greatest moment we have had in all our orchid growing years and totally unexpected. We will cherish this for many years to come. Once again thank you to all.

Reserve Champion – *Dendrobium* Jesmond Star 'Ashlee' (*Den.* Jesmond Treasure x *Den. speciosum* var. *speciosum* 'Windermere') - bred by the late John Purvis (Owned by Wayne Perrin).

Full results will be posted on the web site www.anos.org.au/confernce/results/
native ds – preserve & appreciate.

RHS Registrations of Australian Hybrids -- September to November 2010

Dendrobium

Avsun	Riversun x Avril's Gold	S. Harper 2010
Blue Water	Riversun x Jack Robson	Castle Creek (O/U) 2010
Clarrie's Gold	Allyn Star x *speciosum*	J. Woolf (C. Wuth) 2010
Colonial Falcon	Colonial Surprise x *falcorostrum*	D.P.Weise (I.Klein) 2010
Gippsland	Colonial Campo x *speciosum*	C. Pegg (D. Butler) 2010
Grace Richardson	Bardo Rose x Ellen	J. Woolf 2010
Greta Snow	Jayden x *speciosum*	Cedarvale Orch. (O.U) 2010
Happy Story	Sweet Berry x Success Story	Bio-U 2010
Issy'a Glory	*speciosum* x Jonathan's Glory	Castle Creek (I. Klein) 2010
Issy's Autumn	Moondarra x Aussie Victory	Castle Creek (I. Klein) 2010
Issy's Gem	*speciosum* x Moondarra	Castle Creek (I. Klein) 2010
Jayquest	Jayden x Aussie Quest	F.T.Fear (P.Spence) 2010
Jesmond Star	Jesmond Treasure x *speciosum*	W. A. Perrin (J. Purvis) 2010
Julia	Intice x Tyabb	P. Grech 2010
Juliette Cooper	*kingianum* x Beauty	S. McCulloch 2010
Nicsar	Donovan x *kingianum*	N.Sargant (P.Grech) 2010
Ron and Dot	Yondi Gold x *speciosum*	J. Woolf 2010
Samford Rose	Yondi x *bigibbum*	Cedarvale Orch. 2010
Splash Betty	Zip x Gulginni	Mrs. J. Murray (O/U) 2010
Sweet Berry	Berry x Gillian Leaney	Bio-U 2010
Syd's Delight	*falcorostrum* x Warringah	Castle Creek (O/U) 2010
Toowoomba Rainbow	Louise'e Rainbow x Rutherford Blushing Bride	J. Woolf 2010
Trevor Leisegang	Maron x *bigibbum*	J. Woolf 2010

Sarcochilus

Chloe	Molly x Fizzy Dove	N. Roper 2010
Diva	Dove x Yvette	N. Roper 2010
Firebird	Dove x Zoe	N.Roper 2010
Gadial	Velvet x Topaz	N. Roper 2010
Goldheart	Molly x Topaz	N.Roper 2010
Gunyah	Bessie x *hartmannii*	N. Roper 2010
Kooroora	Judith x Yvette	N. Roper 2010
Lorina	Star Struck x Melody	L. Dougherty 2010
Maria	Peace x Fizzy Dove	N. Roper 2010
Minnow	Zoe x Min Min	N. Roper 2010
Nanga Mai	Ginger x *hartmannii*	N. Roper 2010
Ochre	Orange Glow x Clara	N. Roper 2010
Thea Rosemary	Wandjina x Heidi	J.D. Shaughnessy (B.Fisher) 2010
Tinny	Yvonne x Orange Glow	N. Roper 2010
Toby	Judith x Fizzy Dove	N. Roper 2010

President's Report

At this time of the year, the majority of Orchid Shows will have been held and won, and my congratulations to all Growers who exhibited and assisted in the wonderful presentation of Australasian Orchids at the various Shows during 2010.

Apparently in Victoria growers reported later flowering in most cases than in NSW and Queensland, and a 'bumper' year for *Dendrobium speciosum*.

Reports from the Sydney area of the Orchid Spectacular in the Southern Suburbs indicate a large number of Awards for *Sarcochilus* were given, and congratulations are extended to Neville Roper and David Butler and others who have really progressed the breeding of these little gems.

Congratulations are also extended to Michael Drobski for his Award of FCC/AOC for his beautifully presented *Dendrobium* Australian Goldrush 'Sydenham'. A thoroughly deserved award for a class orchid, and I am fortunate enough to have purchased a division about 10 months ago.
A feature will be presented in the next issue of *The Orchadian* with photos.

The hot weather has certainly inflicted damage on Orchids here in W.A. as we are in a very dry spell, with watering restrictions. It would appear from reports that the Eastern States have fared, well with consistent Winter rains, unlike the West.

The Council still require the service of a Secretary, preferably based in the Sydney area. After the last issue of *The Orchadian*, a Member offered his service, however, due to illness has had to forgo the position.

Over the next months we will all be busy repotting our collections, and with all the love and care we provide, here's hoping you will all have a wonderful flowering 2011.

I would like to wish all Members and their Families a very warm, Happy Christmas and a safe and prosperous 2011.

Kind Regards,

Rick Winch
President
ANOS
(08) 9752-3785
0439-522-236
rickwinch@westnet.com.au

PS.
Once again if any Member would like to contact me, please feel free to call or email.

Cedarvale Orchids

Specialist breeders of Australian Native Orchid Species and Hybrids

2010 CATALOGUE
NOW AVAILABLE
Send SAE for your free copy

Ross & Rhonda Harvey
16 Heather-Anne Drive
DRAPER QLD 4520
Telephone: (07) 3289 1953
email: cedarvaleorchids@cedarvaleorchids.com

PUBLICATIONS FROM THE AUSTRALIAN ORCHID FOUNDATION

Since the publication by the Australian Orchid Foundation of the translation from the German of R. Schlechter's "*Orchidaceae of German New Guinea*", a similar effort was also undertaken on the German texts of J.J. Smith's "*The Orchids of Dutch New Guinea*".

That work was published serially from 1909 to 1935 in the Journal "*Nova Guinea*" in seven parts, the latter two being in English.

J.J. Smith was a contemporary of Schlechter, his work being considered of the same calibre and scope, even though he did not collect in the field. The above works of these two authors, together, cover the orchid flora of the whole of New Guinea, and today, are still considered as definitive.

While the Schlechter translation published in book form included the Latin descriptions of new genera and species, together with his atlas of line drawings, in the Smith translation these are for economy reasons, omitted. However, the respective references are retained while editorial comment, indexes and a gazetteer, together with a grid map covering the complete series of publications to 1935, have been added, for complete coverage, the original publications, available at most herbaria can be consulted.

Recently the office of the AOF has been relocated and a limited number of these publications have been uncovered. We are able to offer the following on a first come basis.

THE ORCHIDS OF DUTCH NEW GUINEA BY J.J. SMITH BOOK 1 of 3 (1990)

Being a translation from *DIE ORCHIDEEN VON NIEDERLANDISCH-NEU-GUINEA* in NOVA GUINEA VOL VIII, part 1, pp 1-142 (1909) with introduction and index. VOL VIII, part III, pp 522-608 (1911) with index

BOOK 2 of 3 (1990)

Being a translation from *DIE ORCHIDEEN VON NIEDERLANDISCH-NEU-GUINEA* in NOVA GUINEA VOL XII, part 1, pp 1-104 (1912) with index. VOL XII, part III, pp 173-272 (1915) (pagination continues with part IV)

BOOK 3 of 3 (1990)

Being a translation from *DIE ORCHIDEEN VON NIEDERLANDISCH-NEU-GUINEA* in NOVA GUINEA VOL VII, part IV, pp 272-469 (1916) (pagination continues from part III) with index for VIII, parts III and IVGazetteer for the complete series to Vol XVIII, part I (1935) with map

All three volumes were edited by D.F. Blaxell D.D.A., B.Sc., F.L.S Assistant Director: Royal Botanic Gardens – Sydney Associates - H.J. Katz B.Sc., DR. RER. NAT. – Melbourne and J.T. Simmons - Adelaide

This work is contained in three, bound, soft cover in A4 typescript, volumes. $80.00 per set, plus postage.

NEW PAPUASIAN ORCHIDS A TRANSLATION OF THE TEXT OF: "NEUE ORCHIDEEN PAPUASIENS" BY J.J. SMITH

"New Papuasian Orchids" A translation of the text of: "Neue Orchideen Papuasiens" by J.J. Smith from"Beitrage Zur Flora Von Papuasien XX" in Englers Bot. Jahrb.. LXVI (1932) PP. 161 – 215 Editor D.F. Blaxell D.D.A., B.Sc., F.L.S Assistant Director: Royal Botanic Gardens – Sydney Associates - H.J. Katz B.Sc., Dr. Rer. Nat. – Melbourne and J.T. Simmons - Adelaide

277 species and varieties of 44 genera are described. 68 pages with Latin text included, Index added. $20.00 plus postage

SOME ORCHIDS OF WEST NEW GUINEA

Being a translation of 'ENIGE ORCHIDEËN VAN WEST NIEUW GUINEA' by J. Van Bodegom Translation by G. Nieuwenhoven Editor J.T. Simmons

Also a translation of the Dutch text, published privately in 1973, is included in this series. Although not a botanical work in the strict sense, it gives detailed descriptions of 85 species from 23 genera and will be found useful for comparison with, and to augment the publications of this series. Included in the 219 pages of soft cover, bound A4 typescript are additional editorial comment, indexes and a gazetteer. Please note that the original publication included numerous photographic illustrations indicating plant habit, etc., but these did not reproduce satisfactorily. $45.00 plus postage

THE ORCHIDS OF MICRONESIA” (1914) AND “THE ORCHIDS OF MICRONESIA (1921)

By Rudolf Schlechter

“The Orchids of Micronesia” by Rudolph Schlechter being a translation of “Die Orchidaceen” from “Beitrage Zur Flora Von Mikronesien Und Polynesien II” by L. Diels in Englers Botanische Jahrbucher Vol. 56 (1921) PP. 434 – 501 Editors and translators -H.J. Katz B.Sc., Dr. Rer. Nat. – Melbourne and J.T. Simmons -Adelaide 94 pages with Latin text included. Index and gazetteer added. $20.00 plus postage

DISEASES OF ORCHIDS

Report on a project funded by the AOF 1994-1996 By D.H. Gowanlock, Centre of Microscopy and Microanalysis and H.J. Ogle, Department of Agriculture. $40.00 plus postage

All these publications are in limited supply and are offered on a first come basis. To order email publications@australianorchidfoundation.org.au or phone (03) 5627 6303

The address for the AOF:

Australian Orchid Foundation
P.O. Box 322,
Essendon North, Vic. 3041
www.australianorchidfoundation.org.au

EVERETT FOSTER OAM
21st September 1919
– 28th October 2010

ANOS Geelong Group was saddened by the death of our Life Member Everett Foster who passed away on 28th October.

Everett was the inaugural President of ANOS Geelong (1987-1990), Secretary from 1990 to 2008 and Bulletin Editor of the clubs magazine until April 2009. Everett only relinquished his position on committee this year. Everett was awarded Life Membership in 2005 for his untiring contribution to the group.

Our deepest sympathy and condolences go out to his wife Margaret and family.

His interest in Orchids came about as something both he and his wife Margaret could do together after 24 years as a cricketer and umpire for the Victorian Country Football League. He was an elder of the Belmont Uniting Church for 23 years. As well as this he was named Sportsman of the Year in 1973, had a native orchid he discovered named after him (*Prasophyllum fosterii*) in 2000, was elected to the Geelong Football Umpires Hall of Fame in 2006 and was awarded the Order of Australia Medal in 2007 for service to the conservation of Australian Native Orchids and to the community of the Geelong region through heritage, Church and sporting organizations.

Everett also co-authored the field guide “Orchids of the Anglesea District” with a third edition updated and published in 2009 when he was 90 years of age.

Rest in peace Everett.

The Australasian Native Orchid Society Inc.

ABN 88 676 231 296
P.O. 318 Willoughby, N.S.W. 2068 AUSTRALIA.

Badges

A.N.O.S. Membership Badge (*Thelymitra ixioides*)	$5.00 ea
Conservation badges:-	
1997 *Sarcochilus falcatus*	$5.00 ea
1996 *Pterostylis cucullata*	$5.00 ea
1995 *Prasophyllum petilum*	$5.00 ea
1994 *Dendrobium affine*	$5.00 ea
1993 *Thelymitra ixioides*	$5.00 ea
1991 *Thelymitra epipactoides*	$5.00 ea
1990 *Dendrobium bigibbum*	$5.00 ea
A.N.O.S. Conference Badges:-	
1st *Pterostylis gibbosa*	$3.00 ea
4th *Caleana major*	$5.00 ea
Plus postage and handling	
1 to 6 badges (Australia)	$2.50 ea
1 to 6 badges (Overseas)	$5.00 ea

••••

The following prices include postage and handling….

A.N.O.S Medallions

Bronze and Silver: provision for engraving on the reverse side	$15.00 ea

BOOKS

ANOS Hybrid Checklist (8th edition) (Australia)	$28.50
(Overseas)	$35.00
Proceedings of the 1st Australasian Native Orchid Conference (Austarlia)	$17.00
(Overseas)	$20.00
Proceedings of the 5th Australasian Native Orchid Conference (Austarlia)	$25.00
(Overseas)	$30.00
Cultivation of Australian Native Orchids – 2nd Edition: A.N.O.S. Victorian Group	$21.00

AUSTRALIAN DECIDUOUS TERRESTRIAL ORCHIDS
Available as….
Bare root plants: May – August
Dormant tubers: November – February

Easily grown species and hybrids from a range of genera including: *Caladenia, Chiloglottis, Corybas, Cyrtostylis, Diuris, Lyperanthus, Microtis, Pterostylis* and *Thelymitra*.

NESBITTS ORCHIDS
PO BOX 72
WALKERVILLE, SOUTH AUSTRALIA 5081
Phone: (08) 8261 1550 Fax: (08) 8266 0372
Email: lesn@adam.com.au

TINONEE ORCHIDS
Visit our Nursery on the
Mid North Coast near Taree, NSW.

Large range of Australian Native Orchids, species & hybrids from tube to flowering size.

Buses/Club Groups welcome by appointment.

Cultural talks & morning tea facilities available. Free catalogue & cultural notes available by request.

Nursery Hours: Mon-Fri 9am to 4pm
Saturday by Appointment

TINONEE ORCHID NURSERY
768 Tinonee Road, Tinonee, 2430
Phone: (02) 6553 1012
www.tinoneeorchids.com *orchids@tinoneeorchids.com*

A BROAD LOOK AT *Dendrobium*

A. Schuiteman[a] and P.B. Adams[b]
[a]Herbarium, Royal Botanic Gardens, Kew, Richmond, Surrey, TW9 3AB, UK;
a.schuiteman@kew.org
[b]School of Botany, University of Melbourne, Vic. 3010, Australia, and National
Herbarium of Victoria, Birdwood Avenue, South Yarra Victoria 3141;
gallangowan@optusnet.com.au

Introduction

Life for the *Dendrobium* specialist was relatively simple until 1981. The very large genus *Dendrobium* was dominant, next to a few smaller, less well known but easily recognized genera which made up the *Dendrobium* alliance, or more formally, the Subtribe Dendrobiineae. Of these smaller genera, *Diplocaulobium*, *Flickingeria* and *Cadetia* have a few species in northern Australia. Together with *Pseuderia* (at present no longer included in Dendrobiinae) and *Epigeneium,* they are better represented in Asia, New Guinea and the Pacific Islands. A pictorial survey of *Dendrobium* and its nearest relatives has been provided by Lavarack *et al.* (2000), and a massive tome treating the dendrobiums from almost every possible angle was written by Wood (2006).

There is a long history of taxonomic changes and proposals aimed at a better understanding of the Dendrobiinae and its internal relationships, and most of these have received a mixed response. This is a clear indicator that classification of the group is difficult, somewhat subjective and partly artificial, and likely to remain that way. John Lindley (1844) initially recognised four sections in *Dendrobium.* Kränzlin (1910) divided *Dendrobium* into ten subgenera and 32 sections, but his treatment was seen as unsatisfactory, as he often included distantly related species in the same group. Kränzlin's classification was severely criticised and rejected by contemporary specialists like Schlechter and J. J. Smith.

Rudolf Schlechter (1872–1925) lived in New Guinea for several years and described numerous new taxa in Dendrobiinae. In 1912 he critically reviewed all known dendrobiums and their allies, recognising only *Dendrobium*, *Cadetia*, and *Pseuderia* as separate genera. He classified *Dendrobium* into 41 sections on the basis of their morphological similarities. His comments also reflected on more problematic sections that were less uniform than others, and which in his opinion would probably require further subdivision.

Many of Schlechter's sections are still recognised, and treatises on *Dendrobium* have continued to use them (possibly under different names), next to additional sections proposed by other workers (Seidenfaden 1985, Upton 1989, Lavarack *et al.* 2000, Schuiteman & de Vogel 2002, Wood 2006). J.J. Smith (1867–1947), who published extensively on orchids from Indonesia, largely agreed with Schlechter, but preferred to keep even *Cadetia* within the fold of *Dendrobium*. Then, in 1981, Brieger broke away with tradition and attempted to subdivide *Dendrobium* into a total of 42 genera in six series, mainly by elevating sections to generic level. He included *Dendrobium* and *Eria* species in the same subtribe, and broke *Eria* up into several genera as well, creating a confusing mixture of two different lineages. The system was very artificial and was, like Kränzlin's, largely rejected. The only genus that has gained some currency, although chiefly in Australia, is *Dockrillia* [*Dendrobium*] section *Rhizobium*.

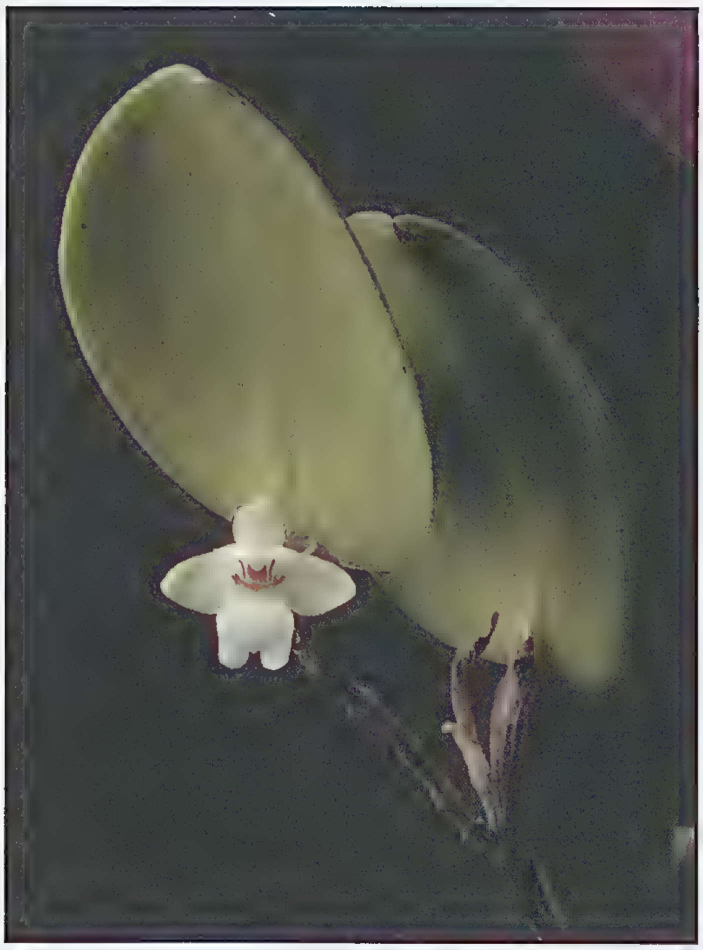
The main reasons why Brieger's attempt was unsuccessful were his lack of familiarity with these orchids (he worked in Brazil, mainly using herbarium material, and did not visit Australia), and because he failed to provide any new evidence. Historically, one of the major problems with orchid taxonomy has been the tendency to present classifications and name changes without providing sufficient evidence or discussion of why changes are proposed. The result is a reluctance of users familiar with well established systems to adopt these changes. Name changes necessitated by mistakes in earlier work, such as not observing rules of precedence, are more easily accepted than those involving the more subjective concepts of species and genera. As genera and species by their very nature as evolved entities are not precisely defined, there is often a range of opinion on their delimitation, particularly concerning what rank should be used. In *Dendrobium*, with a wide spectrum of variation present from genus level down to species level, it is not surprising that classifications have varied over time.

Clements (1989, 2006) and Clements and Jones (2002) divided Australian dendrobiums into numerous genera, and elevated many well known varieties of species to specific rank. A series of papers and articles reviewing and commenting on these changes have been written in Orchadian and elsewhere (Dockrill 1992, Stocker 2003, Lavarack 1991 and 1996, Grundon 1990, Harrison 1990, Adams 1990, Burke *et al*. 2006).

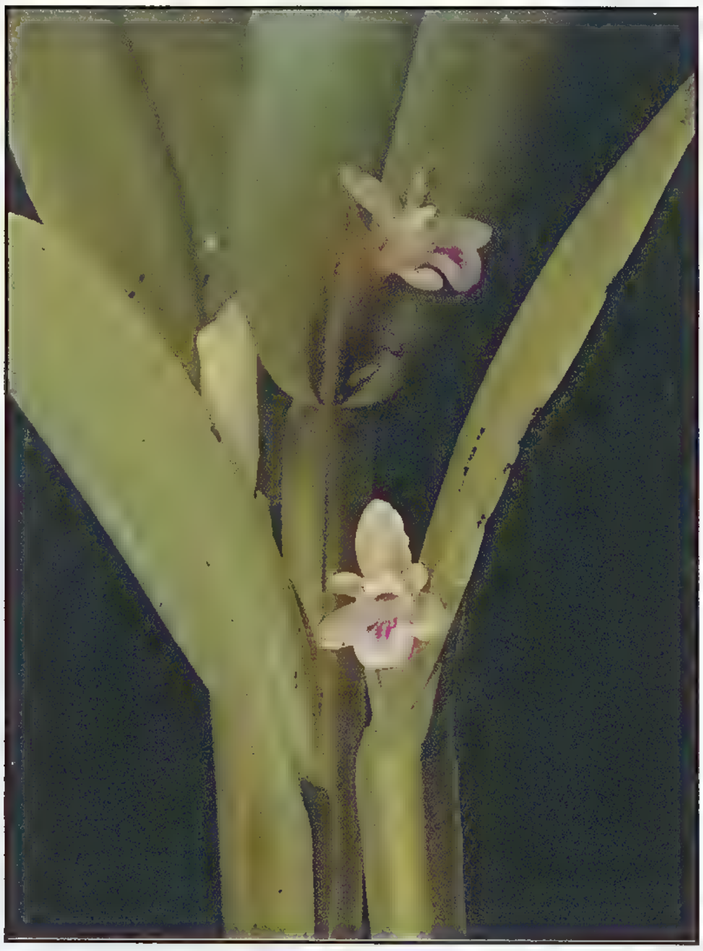
DNA and Cladistics

In the last two decades, taxonomists have turned to molecular, in particular DNA, analysis to provide more evidence for relationships. This kind of analysis has the potential to assist in developing more natural classifications, in other words, classifications that better reflect the evolutionary relationships between the species. The results of sequencing DNA are used in cladistics, a method developed by the German entomologist Willi Hennig to classify organisms into evolutionary groups called clades. Orchid growers who want to understand this approach need to know the basics of cladistics and DNA studies, their advantages and limitations, and the significance of a very different type of evidence compared with the conventional morphological approach. See the Glossary below for definitions of some of the terms used. Many scientists and hobbyists have expected that DNA studies would clarify and solve the problem of difficult taxonomic groups such as *Dendrobium*, and would replace conventional methods. In some cases this has occurred, but in others the results have not clarified or may even have confused the problems, with sets of data in which relationships are uncertain, and in which there are no clear indicators to decide on the ranks to be used.

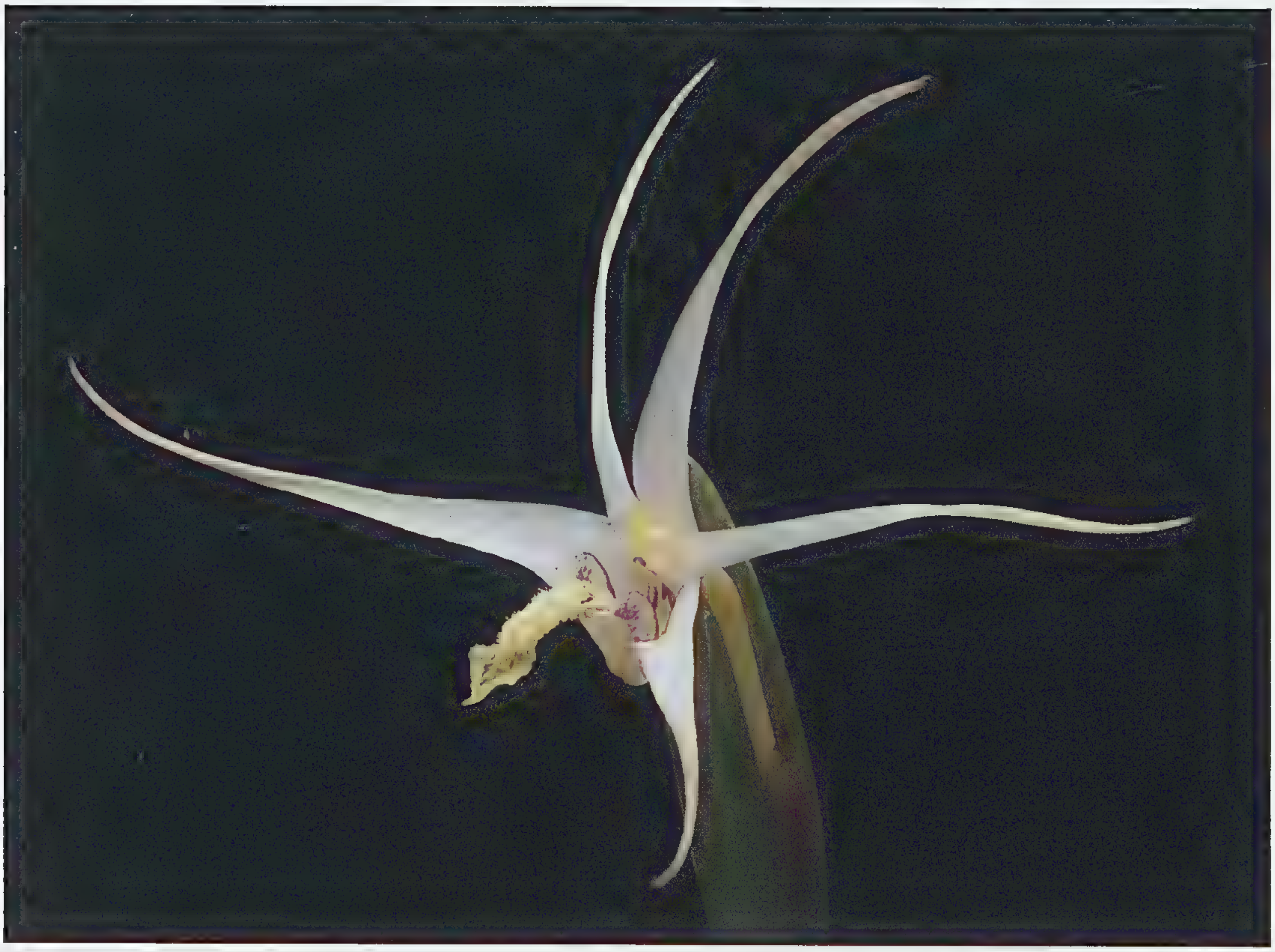
What does DNA analysis involve? With present day techniques only a very small part of the total DNA is studied, usually a particular sequence, also called a marker, of a few hundred bases, which is chosen because it changes with the right speed over evolutionary time. Sequences that evolve too slowly or too quickly are not useful, because they either contain no signal (no differences between different species), or a signal that is basically random noise. The most widely used marker for orchids is the internal transcribed spacer of nuclear DNA (ITS-DNA), consisting of about 700 bases. It is concerned with the internal structures and basic metabolic processes in living cells, and is not directly linked with the development of morphological characters. When this sequence of 700 bases is identified



Dendrobium [*Flickingeria*] *durum*



Dendrobium [*Cadetia*] *triquetrum* Ridl.,



Dendrobium [*Diplocaulobium*] *nitidissimum* -- Photos A. Schuiteman

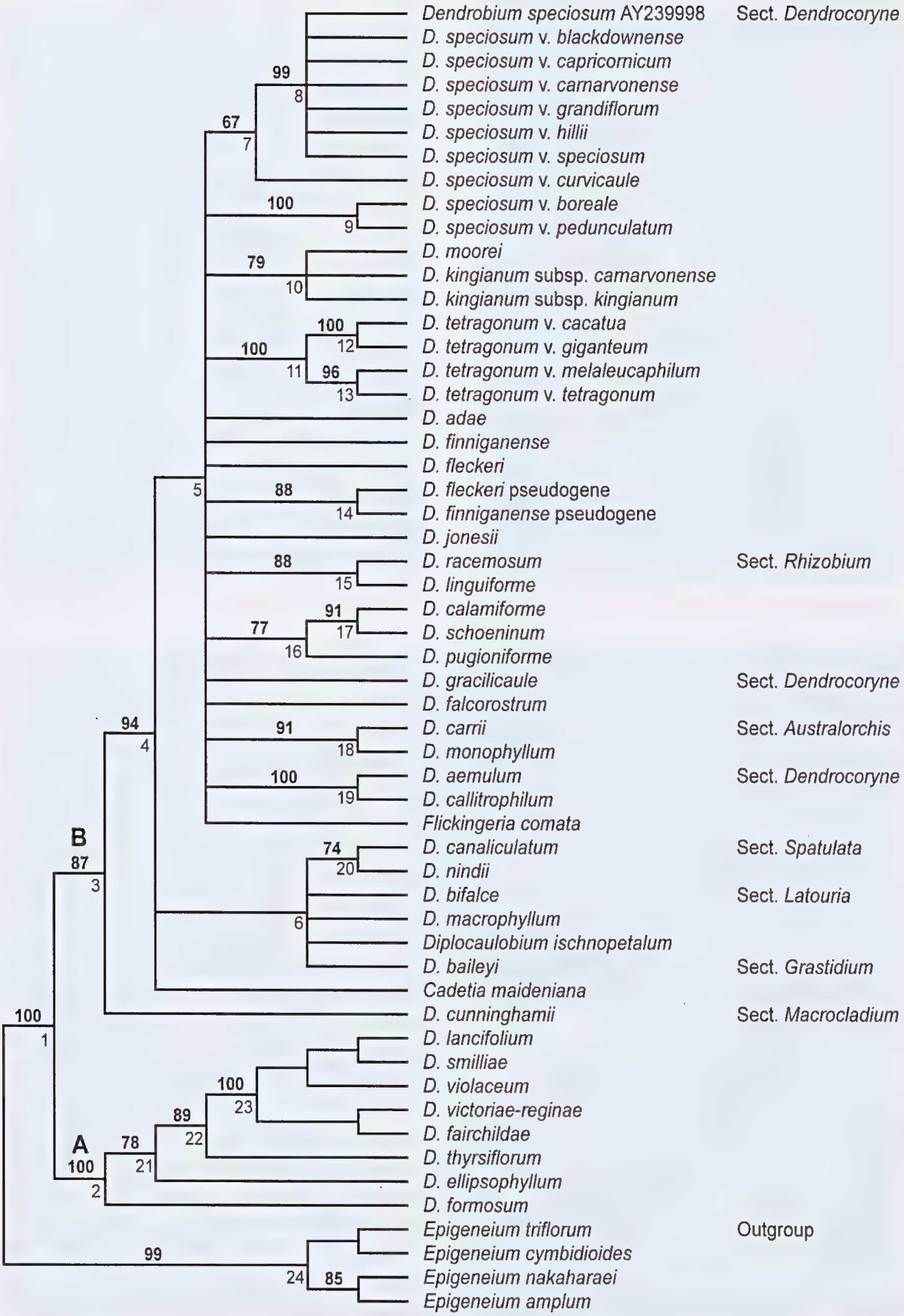


Figure 1. Phylogeny of *Dendrobium* on the basis of ITS sequence data, (from Burke et al. 2008)

for each orchid species under study, individual species can then be compared in a more direct and objective way than was previously possibly using morphological characters. Generally speaking, greater numbers of base differences between species suggest more distant relationships, but this is not always the case. Computer programmes are used to construct phylogenetic trees that indicate probable evolutionary relationships. The methods do not automatically indicate the rank of the branches (or clades) of the trees, in other words, they don't tell us that a particular branch (clade) is a genus or a section. Providing ranks is to some extent subjective, as is the case in morphological taxonomy.

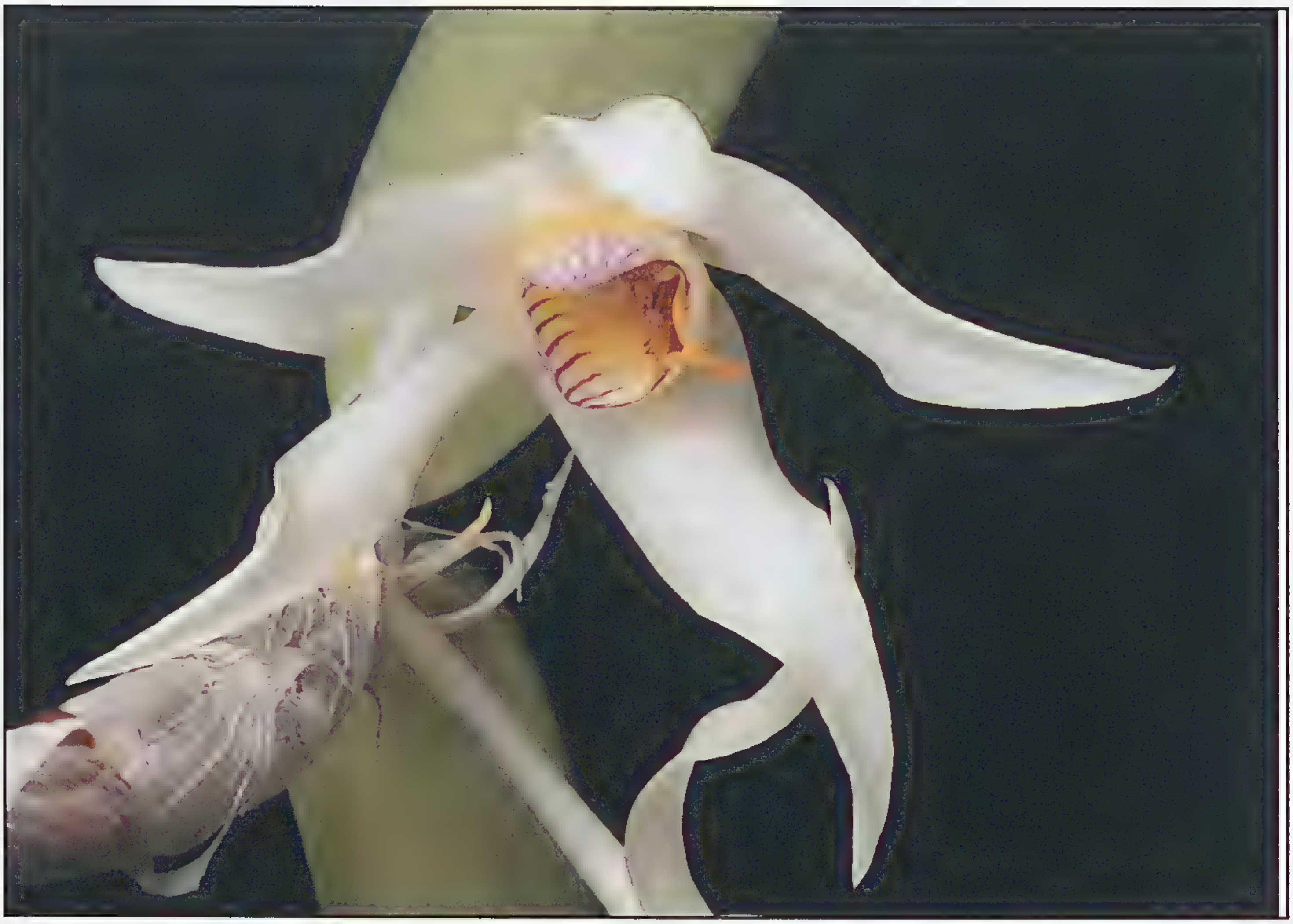
When DNA sequences are produced, the value of the data is not apparent until the trees of relationship (called cladograms or phylograms) are built from them and assessed for their degree of resolution, which reflects the strength and precision of the signal in the sequences. A statistical measure called the support of the group is vital information that tells us about the reliability of the relationships. The results must be interpreted by taxonomists who are familiar with the group, so that they are able to spot problems and anomalies. If we are fortunate, the trees have strongly supported branches and there is confidence that the relationships in the tree reflect an evolutionary process. When the groups revealed do not tally well with morphological evidence, there may be differences of opinion on what evidence should be used in classification, which names should be proposed for genera and species, and whether the taxonomy of the group should be conserved or revised. The preamble of the International Code of Botanical Nomenclature states as an important aim the stability of names, with changes to be made only on the basis of significant evidence.

How the molecular revolution has produced information about the *Dendrobium* alliance

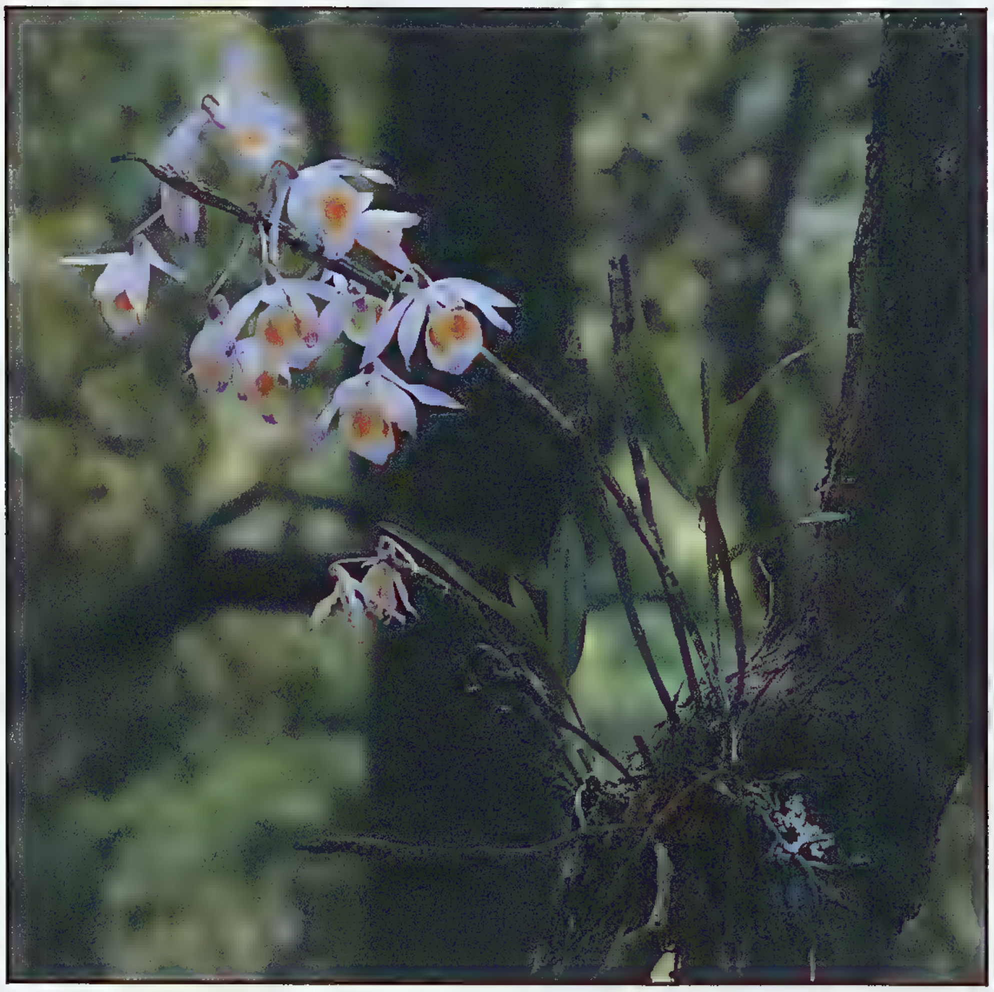
The first to apply these molecular techniques specifically to *Dendrobium* were Yukawa and his co-workers (1993, 1996, 2000, 2001). Some of their results are the following:

1. The phylogenetic tree of the Dendrobiineae has three well supported basal branches. There is a small one consisting of the genus *Epigeneium*, next to a pair of very large branches, each with many hundreds of species.
2. There is a distinct biogeographical signal in these branches, in that one of the large branches contains mainly species with an easterly distribution, in particular from Australia, New Caledonia and New Guinea (Australasian clade), while the *Epigeneium* branch and the second of the two main branches contain mainly species that have a more westerly distribution (Asian clade).
3. The various sections of *Dendrobium* in current use that were based on morphology are consistent with the three main branches, as no section is found in more than one branch.
4. The genera *Cadetia*, *Diplocaulobium*, *Dockrillia* and *Flickingeria* are all nested within *Dendrobium*, while *Epigeneium* is the nearest relative (the sister group) of all the other Dendrobiineae combined.
5. *Pseuderia* does not belong in the Dendrobiinae, but appears to be related to the genus *Appendicula* in the tribe Podochileae.
6. The Dendrobiinae as a whole are most closely related to the Bulbophyllinae while the Eriinae are more distantly related.

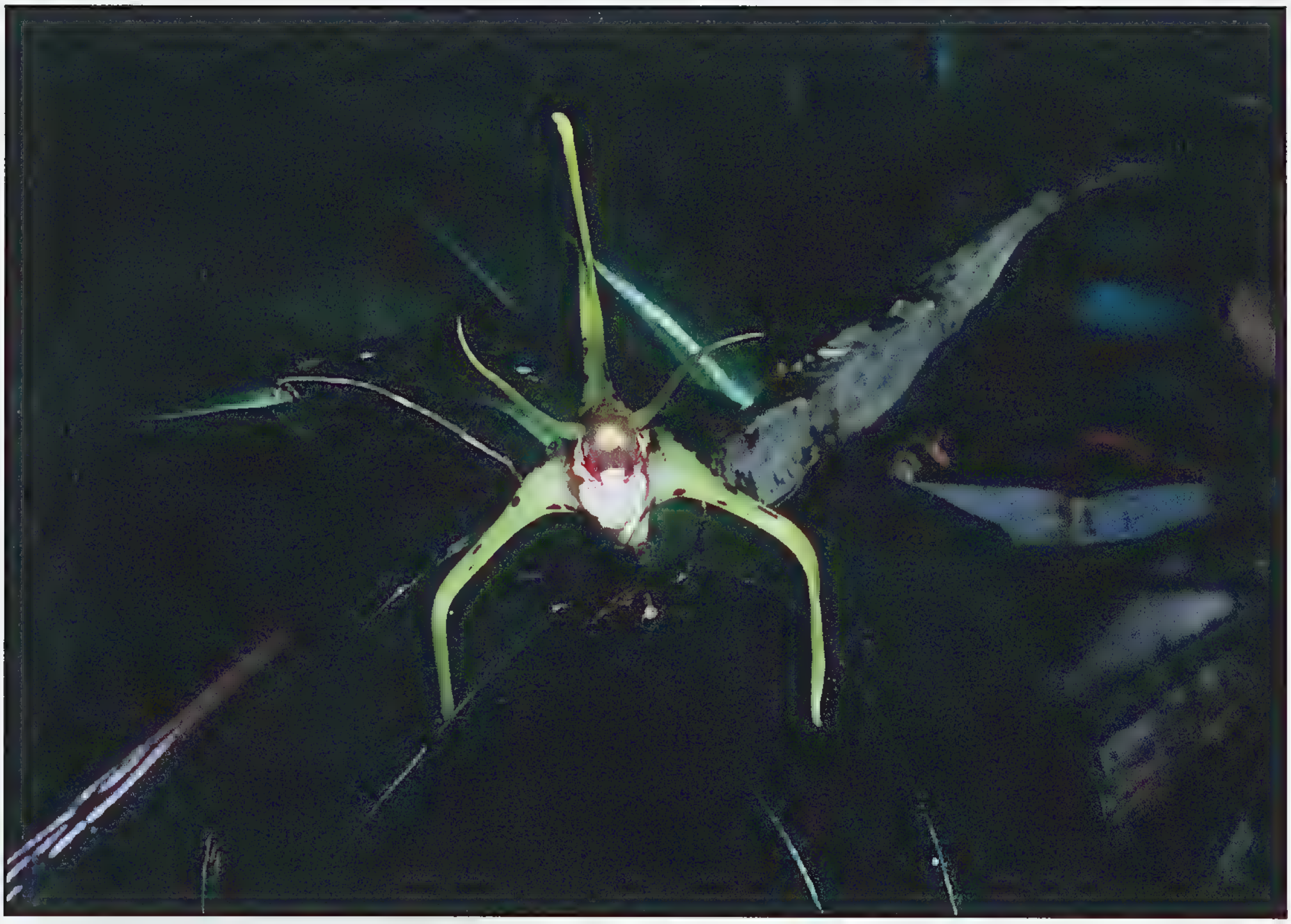
These are clear results, which would have been almost impossible to establish using the traditional morphology-based methods of taxonomy. Later molecular studies confirmed this picture and added more detail. Clements (2003,



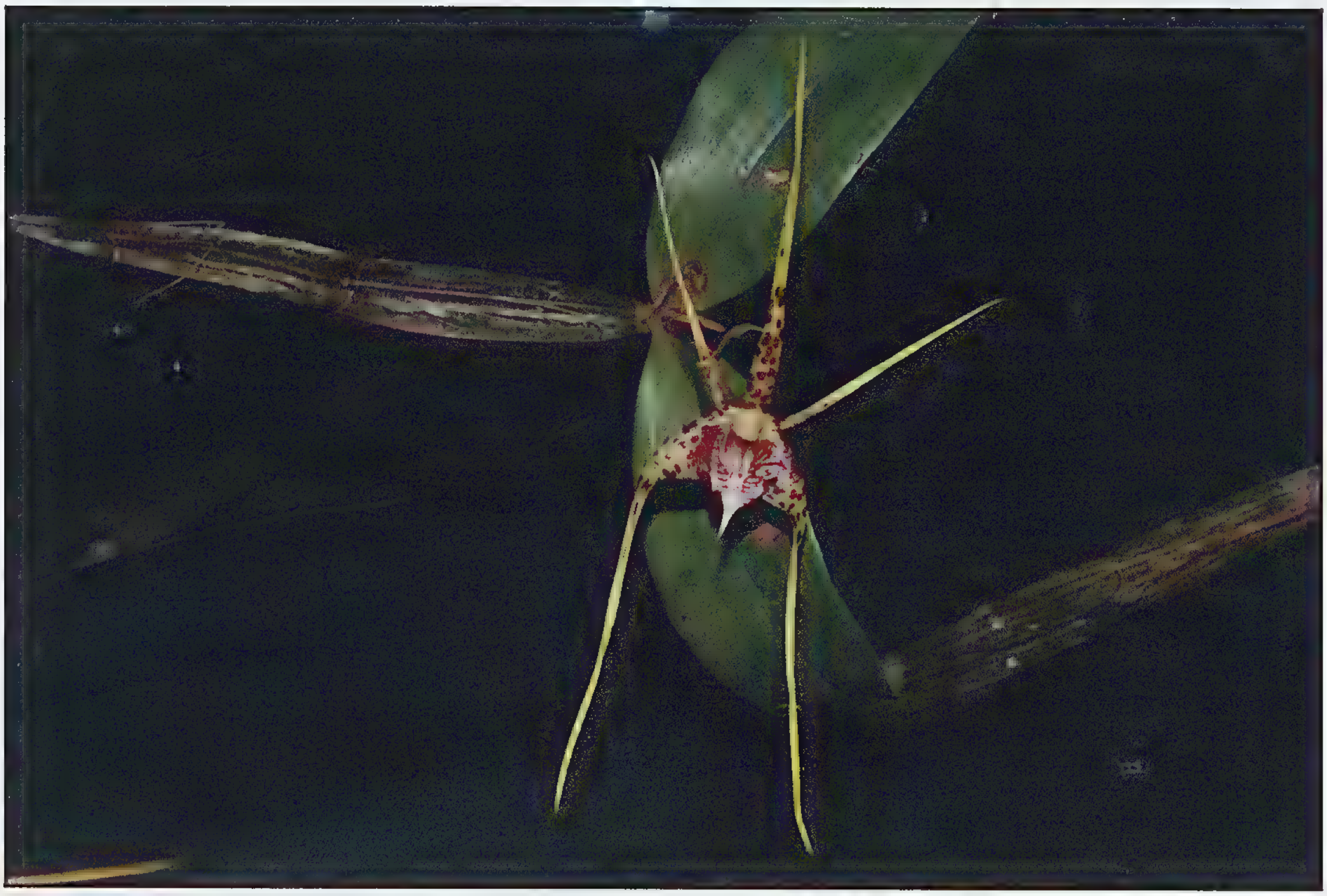
Dendrobium [*Fugacia*] *lacteum* Kraenzl -- Photo A. Schuiteman



Dendrobium gratiosissimum -- Photo A. Schuiteman



Dendrobium tetragonum var. *giganteum* from Conway Range -- Photo P. Adams



Dendrobium tetragonum var. *giganteum* from Iron Range -- Photo P. Adams

2006) showed that *Dendrobium* section *Oxystophyllum* does not belong in the Dendrobiinae, but rather in the Eriinae. He also found that species traditionally assigned to section *Pedilonum* occur in several branches that may not be closely related. Schlechter had already stated that *Pedilonum* was not a uniform group, and would most likely be further subdivided. Finding morphological support for the various branches within the former *Pedilonum* group is still a largely unsolved problem. Wongsawad *et al.* (2005) obtained a similar non-uniform result with respect to section *Densiflora* (syn. sect. *Callista*). Burke *et al.* (2008) showed that there was insufficient evidence to split the Australasian dendrobiums into many genera, including *Tetrabaculum*, *Tropilis* and *Thelychiton* (sect. *Dendrocoryne*), *Dockrillia* (sect. *Rhizobium*), and *Australorchis* (sect. *Monophyllaea*), which all belong in an unresolved group together with *Flickingeria*. In the ITS-DNA phylogenetic tree (Fig. 1), the Asian clade A is seen below the Australasian clade B, and diverges from it with 100% support at node 1. The results for Australian orchids can be seen in the Australasian clade B, where there are a large number of non-resolved groups at node 5. *Cadetia* and *Diplocaulobium* are also seen to be unresolved from the main group at node 4. In the large non-resolved group, termed a polytomy, the relationships of the subgroups to each other are not resolved to show branches as in a family tree, for example, reading down from the top: *D. speciosum* complex, *D. kingianum*, *D. tetragonum, D. adae, D. finniganense, D. fleckeri*, and so on, down to *Flickingeria comata*. They could be drawn in the diagram in any order rather than the one given. Of particular note is the position of section *Rhizobium* (=*Dockrillia*), which sits in the middle of *Dendrocoryne* species and other sections. The conclusion is that all these groups, including *Flickingeria*, *Diplocaulobium*, *Cadetia*, and *Dockrillia*, are equivalent in rank to *D. gracilicaule*, *D. falcorostrum, D. jonesii* etc. and to each other. On this evidence they are not separate genera.

Finally, Sathapattayanon (2008) studied almost all members of section *Formosae* and found that the section is a natural (monophyletic) group of about 40 species if some anomalous elements traditionally included in it are removed.

Drawing the consequences

Clements is the only author cited here who advocates splitting up *Dendrobium* into a great number of smaller genera, around 50 at the latest count (Clements 2006). As we have already pointed out above, there is no objective way to determine whether a branch in a phylogenetic tree represents a subtribe, a genus or a section. These are largely arbitrary ranks. In that sense, it cannot be claimed that Clements is right or wrong. Conversely, it is not correct to say that molecular results *demand* that the Dendrobiinae be split up into a certain number of smaller genera. Whether or not to split up a given genus into smaller genera or into an equal number of sections or subgenera is ultimately a subjective issue. However there are some inappropriate ways to do the splitting, and there are various arguments that can be used in favour or against using a certain rank.

Most important, the groups that are recognized (genera or sections) should be monophyletic. In other words, when a certain branch in the phylogenetic tree (a clade) is to be recognized as a section or genus, it should include *all* the species from that clade, and *not* include species from other clades outside it.

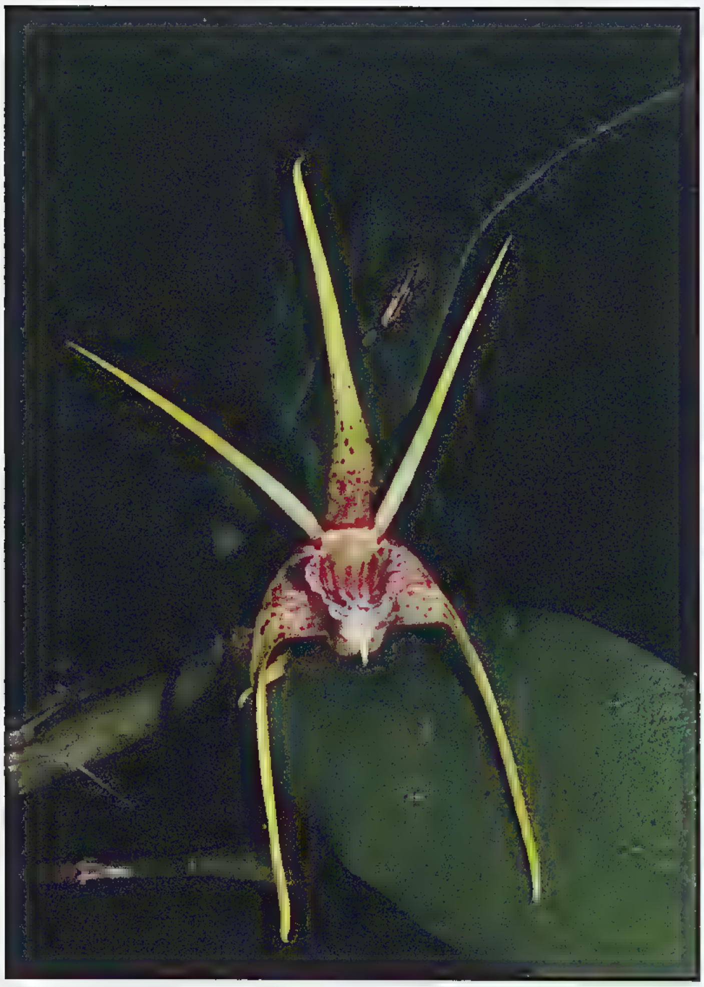
On balance, we think that the arguments against splitting up *Dendrobium* into smaller genera are dominant. Subdivision of *Dendrobium*, as proposed, would result in too many genera that hardly anybody could recognise, too many name changes, and not enough benefits. A consequence of this position is that the genera *Cadetia*, *Diplocaulobium*, *Dockrillia* and *Flickingeria* cannot be maintained at generic level, and they have to be placed back into *Dendrobium*.

This is unfortunate, because these genera have been well recognized for many years, but most can be salvaged by ranking them as sections within *Dendrobium*. Many other sections are less distinctive, but would still need to be recognized in a natural classification of *Dendrobium*. For *Diplocaulobium*, *Cadetia* and *Flickingeria*, which all have natural morphological subgroups, it may be necessary to divide them into named subsections.

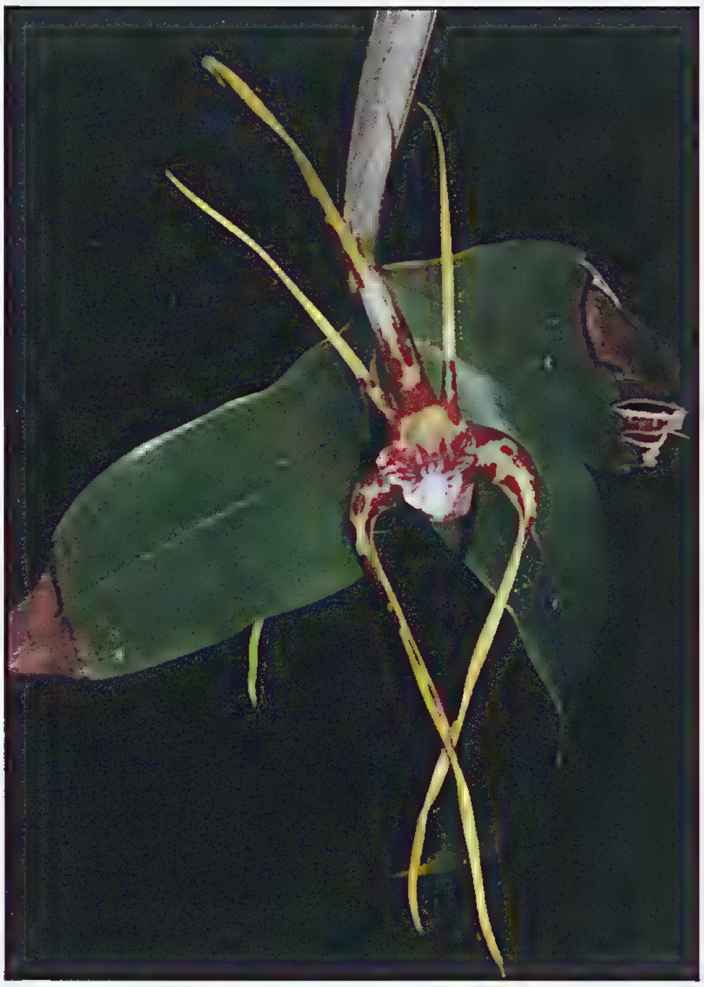
How about the species?

Some authors (Clements 1989, 2003, 2006, Clements and Jones 2002, Clements *et al*. 2006) advocate a degree of splitting that we, and others quoted at the end of the introduction, consider to be excessive. Species form populations, and where variability has been studied in the field, the evidence is in favour of species complexes with infraspecific subgroups, rather than subdivision into many species. We consider that this is the case for *D. speciosum*, *D. kingianum*, *D. tetragonum*, and *D. aemulum*, as well as other Australian orchids that require further field work and numerical analysis (Adams *et al.* 2006abc, Adams and Lawson, 1995, Burke *et al.* 2008). The elevation of varieties and other infraspecific taxa to species level is problematic for identification, especially of plants used in hybridisation, and results in many name changes. DNA studies at this level of the *Dendrobium* hierarchy show fairly low variation in the number of base differences and sometimes none, and the results do not correlate at all well with morphology.

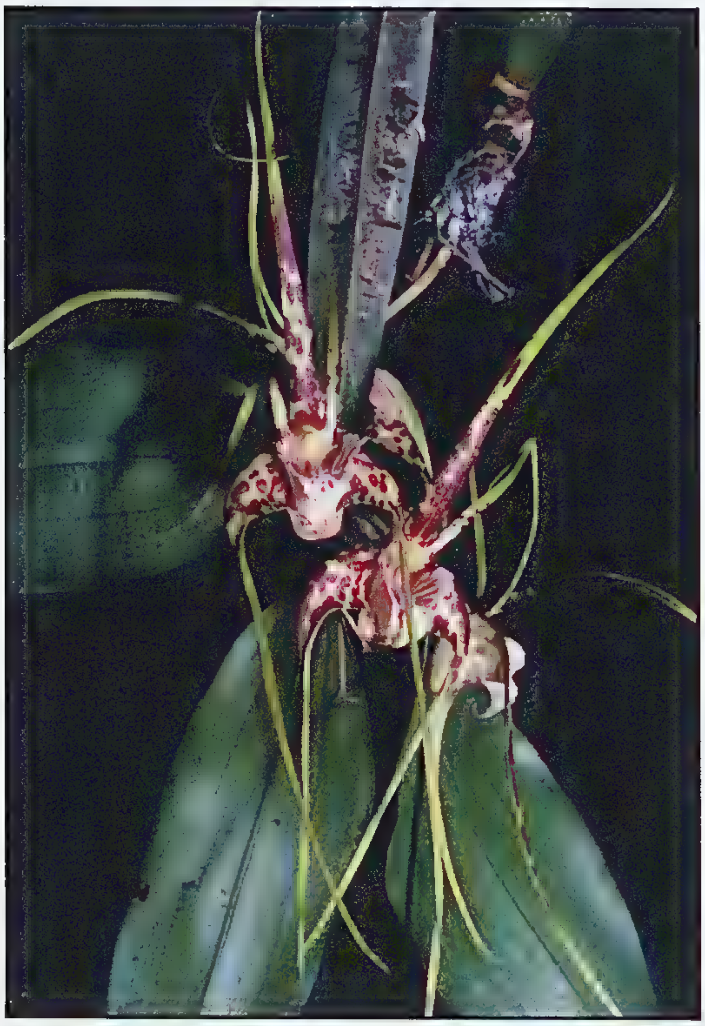
Recording all of the main variants of widespread species is a big undertaking in Australia, and has rarely been achieved over the entire, often huge distribution ranges. Where it has been reasonably well completed for a few species, e.g. *D. speciosum*, *D. tetragonum*, *D. kingianum*, the differences relate mainly to the size of vegetative and floral parts, and to floral colour patterns, with much intergrading. An example of this is seen in the accompanying photographs of variations of *D. tetragonum* var. *giganteum*. Over a distribution range from the Mackay area to Iron Range, north Queensland, there are plants with many different flower sizes and shapes, dimensions of floral parts, especially the labellum, and colour patterns. In the lowlands, plants may be highly coloured with purple-brown, or pale yellow with very few purple markings. Constructing reliable keys to identify variants of species complexes is difficult or not possible, and many individual plants cannot be identified without locality information. A broader species concept makes identification possible and conserves long used nomenclature. To be accepted, and pass into long term use, classifications at generic and species level must be evidence based, practical, and maintain nomenclatural stability as far as possible. Over a period of more than 150 years, developments in Dendrobiinae classification illustrate the difficulties taxonomists face, with attempts to reflect the outcome of the evolutionary process using both narrow and broader concepts of taxa. None of these should be simply accepted or dismissed as either right or wrong; rather the history of *Dendrobium* classification can be seen as a series of steps in the process of gaining knowledge and a better way to communicate about a group of fascinating and often supremely beautiful orchids.



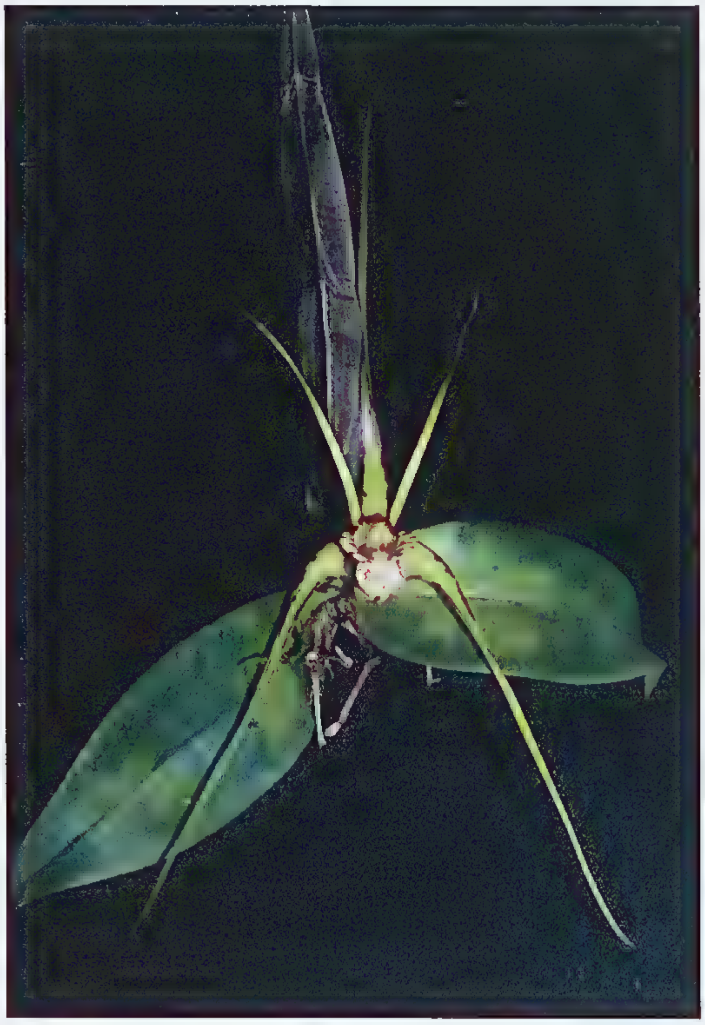
Den. tetragonum var. *giganteum* from Iron Range



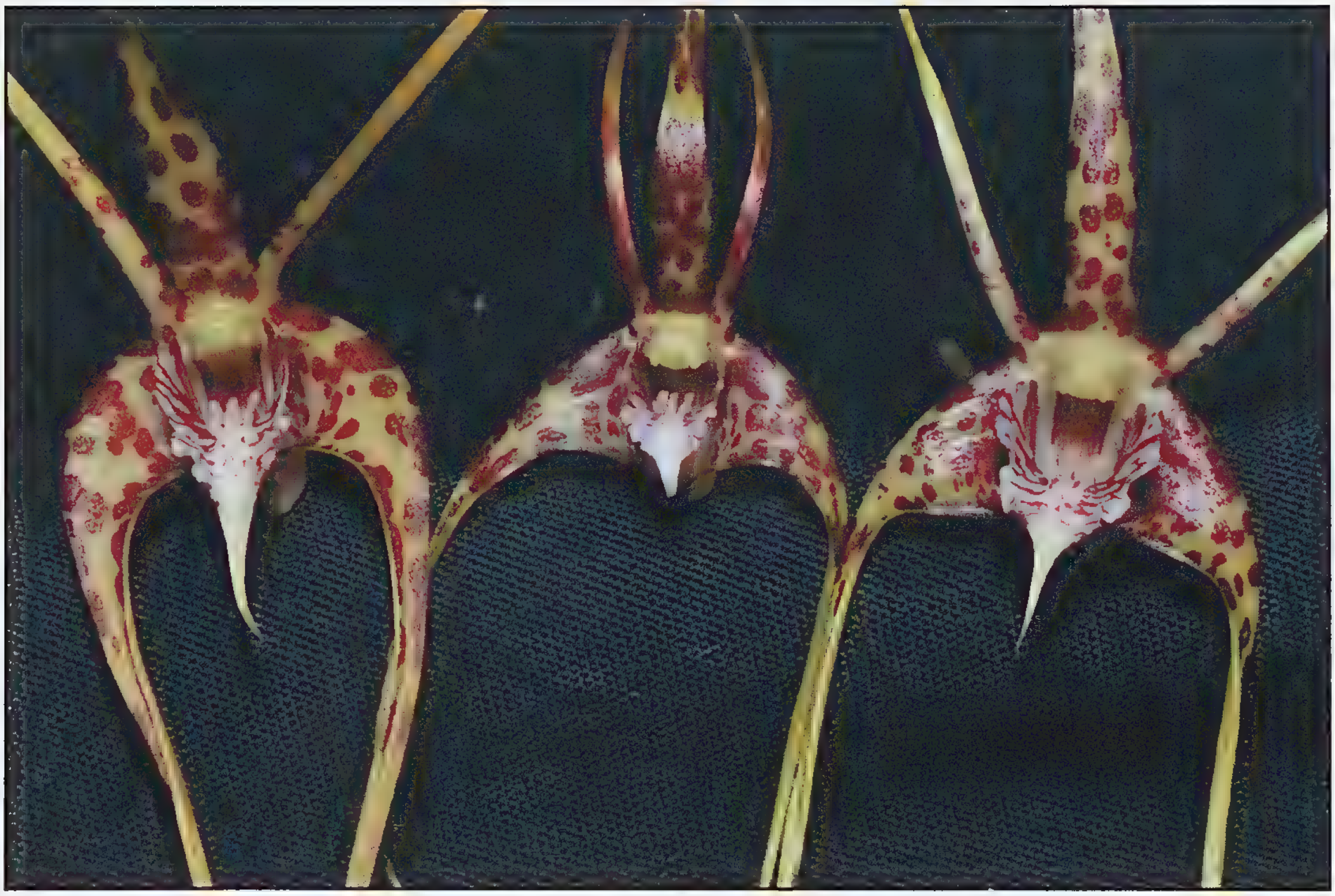
Den. tetragonum var. *giganteum* from McIvor River



Den. tetragonum var. *giganteum* from McIlwraith Range



Den. tetragonum var. *giganteum* from Windsor Tablelands - all Photos P. Adams



Dendrobium tetragonum var. *giganteum* variants from Iron Range -- Photo P. Adams

Glossary

Clade: a single branch of an evolutionary tree; a group with a common ancestor and all its descendants.

Cladistics: method of classifying groups of organisms into clades.

Dichotomy: a division into two basal clades (a fork in a phylogenetic tree).

Monophyletic: forming a clade.

Nested in: forming part of a clade, while not being a sister group to the other members of the clade.

Nuclear DNA: DNA from the nucleus of a cell (as opposed to DNA from chloroplasts and mitochondria).

Phylogenetic: referring to or reflecting the evolutionary history of a group of organisms.

Polytomy: section of a phylogenetic tree with three or more branches arising from the same ancestral node. In a polytomy the evolutionary relationships cannot be resolved to dichotomies, and therefore a polytomy provides less information about a group.

Resolution: The extent to which a phylogeny can be described as a collection of well-supported dichotomies. Low resolution means that there are large polytomies or many branches with low support in the phylogenetic tree, high resolution means that there are only dichotomies and clades with strong support.

Sequencing: determining the order of the bases in a string of DNA or RNA (now a standard laboratory technique).

Sister group: The clade most closely related to a different, given clade.

Species complex: a group of variants that are closely related and identifiable as one species, and not sufficiently and consistently distinctive in characters to be considered as separate species.

Support: A statistical measure of the robustness of a result, or conversely, the sensitivity of the result to changes in the data (expressed as a number between 0 and 100, where 100 is the highest level of support).

References

Adams PB and Lawson SD (1995) *Dendrobium kingianum: a unique Australian orchid*. Central Queensland University Press, Rockhampton Queensland.

Adams PB (1990) Recent proposed name changes for Australian species orchids. Orchid Species Society of Victoria. *Orchids Australia* **21**, 44–45.

Adams, PB, Burke, JM, and Lawson, SD (2006a) A review of the taxonomy and relationships of the *Dendrobium speciosum* complex (Orchidaceae), and recognition of two new taxa. *Telopea* **11**, 195–232.

Adams, PB, Burke, JM, and Lawson, SD (2006b) *Dendrobium speciosum* Sm., the great *Dendrobium*, is a single species. *Orchadian* **15**, 208–240.

Adams, PB, Burke, JM, and Lawson, SD (2006c) *Dendrobium speciosum* (*Dendrocoryne*: Orchidaceae) complex in north Queensland. *Australian Systematic Botany* **19**, 259–271.

Adams PB, Burke, JM and Lawson SD (2006). Systematic analysis of *Dendrobium* Swartz section *Dendrocoryne* in the Australian region. *Plant Systematics and Evolution* **260**, 65–80.

Brieger FG (1981) Subtribus Dendrobiinae. In Schlechter R. (Brieger FG, Maatsch R, Senghas K, editors), Die Orchideen, 3rd edn (11–12), pp. 636–752. Verlag Paul Parey, Berlin.

Burke JM, Bayly MJ, Adams PB and Ladiges PY (2008) Molecular phylogenetic analysis of *Dendrobium* (Orchidaceae), with emphasis on the Australian section *Dendrocoryne*, and implications for generic classification. *Australian Systematic Botany* 21, 1–14.

Clements MA (1989) *Catalogue of Australian Orchidaceae. Australian Orchid Research Vol. 1.* Australian Orchid Foundation, Essendon Victoria.

Clements MA (2003) Molecular phylogenetic systematics in the Dendrobiinae (Orchidaceae), with emphasis on *Dendrobium* section *Pedilonum. Telopea* **10**, 247–298.

Clements MA (2006) Molecular phylogenetic systematics in Dendrobieae (Orchidaceae). *Aliso* **22**, 465–480.

Clements MA and Jones DL (2002) Nomenclatural changes in the Dendrobieae (Orchidaceae). 1: The Australasian region. *Orchadian* **13**, 485–497.

Dockrill AW (1992) *Australian Indigenous Orchids Vol.1.* 2nd Ed. Pub. Surrey Beatty and Sons.

Grundon N (1990) Review. Catalogue of Australian Orchidaceae; Australian Orchid Research 1: 1–60 M.A. Clements. *Orchadian* 9: 287–289.

Harrison M (1990) Review. Catalogue of Australian Orchidaceae; Australian Orchid Research 1: 1–60 M.A. Clements. *Orchadian* 9: 291–292.

Jones DL, Clements MA, and Sharma I (2006) Towards a revision of the *Thelychiton speciosus* group. In: *Australian Orchid Research* 5: 34–44.

Kränzlin F (1910) Orchidaceae – Monandrae-Dendrobiinae I. In Engler A ed. Das Pflanzereich, Heft 45.

Lavarack PS (1991) An appraisal of the species concept in the taxonomy of Australian orchids. *Orchadian* 10: 141–143. Lavarack PS (1996) Orchid taxonomy – what names should we use. *Orchadian* 11: 558.

Lavarack PS, Harris W and Stocker G (2000) Dendrobium *and its relatives.* Timber Press, Oregon.

Lindley J (1844) *Dendrobium. Botanical Register* **30**, 46–64.

Sathapattayanon A (2008) *Taxonomic revision of orchids in the genus Dendrobium Sw. section Formosae (Benth. & Hook.f.) Hook.f. in Thailand and adjacent areas.* Thesis, Chulalongkorn University, Bangkok.

Schlechter R (1912) Die Orchidaceen von Deutsch-Neu-Guinea: Dendrobiinae.

Repert. Spec. Nov. Regni Veg. Beih. **1**, 420–643.

Schuiteman A, de Vogel EF (2002) Flora Malesiana: Orchids of New Guinea Vol. II; *Dendrobium* and allied genera. CD-ROM. ETI, Amsterdam.

Seidenfaden G (1985) Orchid genera in Thailand. XII. *Dendrobium* Sw. Op. Bot. 83: 1–295.

Stocker GC (2003) *Dockrillia* – an alternative view. *Australian Orchid Review* August/ September, p. 27.

Upton WT (1989) *Dendrobium Orchids of Australia*. Portland, Oregon: Timber Press.

Wongsawad P, Handa T and Yukawa T (2005) Molecular phylogeny of *Dendrobium Callista - Dendrobium* complex, in H. Nair and J. Arditti (eds.), *Proceedings of the 17th World Orchid Conference, Shah Alam, Malaysia.*

Wood HP (2006) The Dendrobiums. A.R.G. Gantner Verlag, Ruggell.

Yukawa T (2001) Molecular phylogeny of *Dendrobium*. In H Nagata and S Ichihashi (Eds.), Proceedings of the seventh Asia Pacific orchid conference (APOC7), pp. 69–71. Nagoya, Japan.

Yukawa T, Kurita S, Nishida M and Hasebe M (1993) Phylogenetic implications of chloroplast DNA restriction site variation in subtribe Dendrobiinae (Orchidacaeae). *Lindleyana* **8**, 211–221.

Yukawa T, Ohba H, Cameron KM, Chase MW (1996) Choloroplast DNA phylogeny of subtribe Dendrobiinae (Orchidaceae): insights from a combined analysis based on *rbc*L sequences and restriction site variation. *Journal of Plant Research* **109**, 169–176.

Legends

Figure 1. Phylogeny of *Dendrobium* on the basis of ITS sequence data, Analysis 1. A strict consensus tree of 1846 most and equally parsimonious trees, with *Epigeneium* as the outgroup. Numbers above branches are bootstrap support values; nodes are numbered 1–24. A = Asian clade of *Dendrobium*; B = Australasian clade. (adapted from Burke *et al.* 2008)

Dendrobium [*Flickingeria*] *durum* J.J.Sm., cultivated at the Hortus Botanicus, Leiden, from Borneo. Photo André Schuiteman.

Dendrobium gratiosissimum Rchb.f., growing wild in Laos, Phongsaly province. Photo André Schuiteman.

Dendrobium [*Fugacia*] *lacteum* Kraenzl., cultivated at the Hortus Botanicus, Leiden, from Papua New Guinea. Photo André Schuiteman.

Dendrobium [*Diplocaulobium*] *nitidissimum* Rchb.f., cultivated at the Hortus Botanicus, Leiden, from Papua New Guinea. Photo André Schuiteman.

Dendrobium [*Cadetia*] *triquetrum* Ridl., cultivated at the Hortus Botanicus, Leiden, from Papua New Guinea. Photo André Schuiteman.

Orchids Australia

OFFICIAL PUBLICATION OF THE
AUSTRALIAN ORCHID COUNCIL
92 Pages
Eye-catching Color

Subscription Rates
$50.00 pa (six copies)

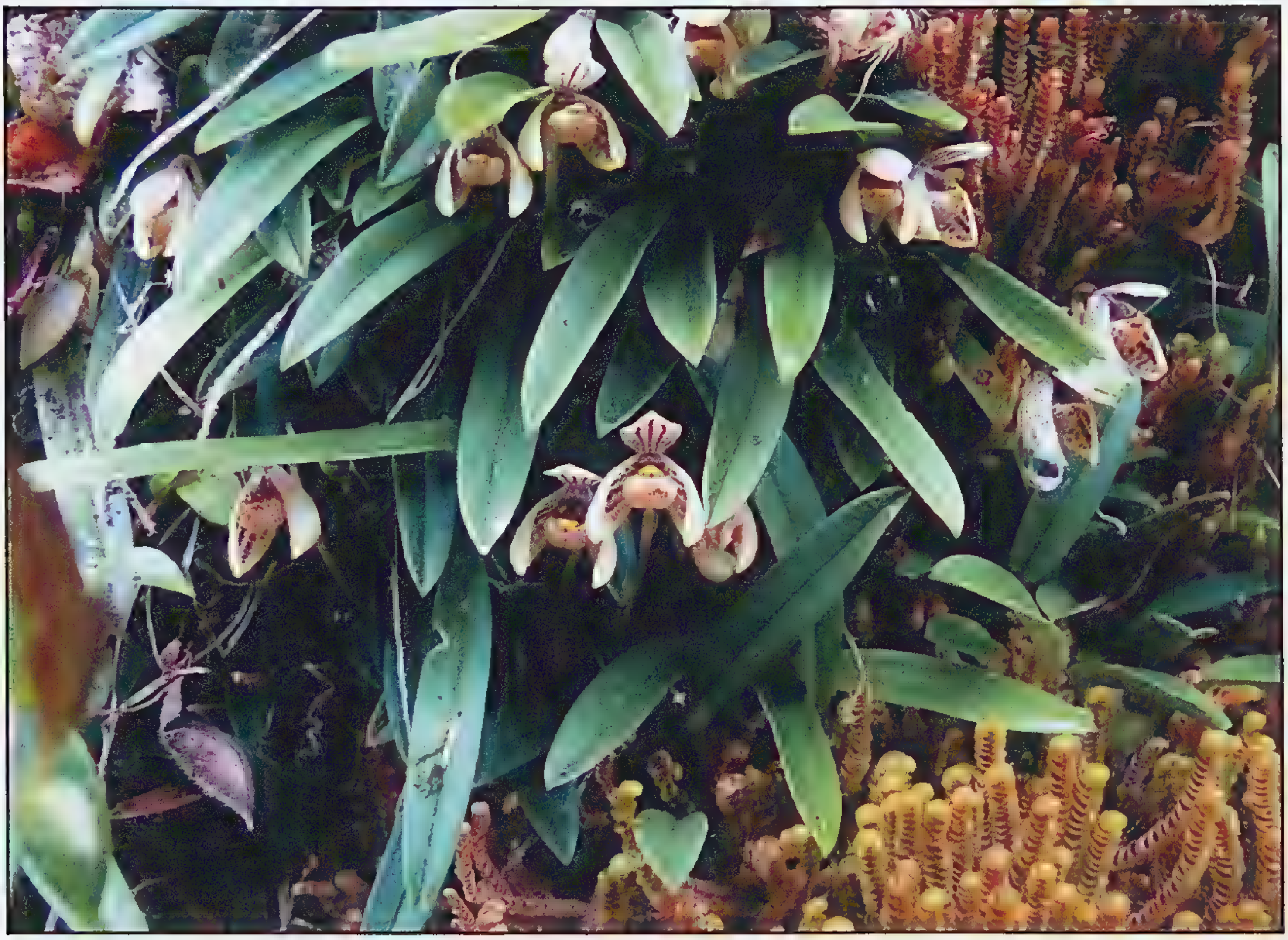
Check out our home page on the internet
http://www.orchidsaustralia.com

Orchids Australia
P.O. Box 329, Mitcham, SA. 5062
Australia
coralie.hills@bigpond.com
(Advise Card Name,
Number and
expiry date)

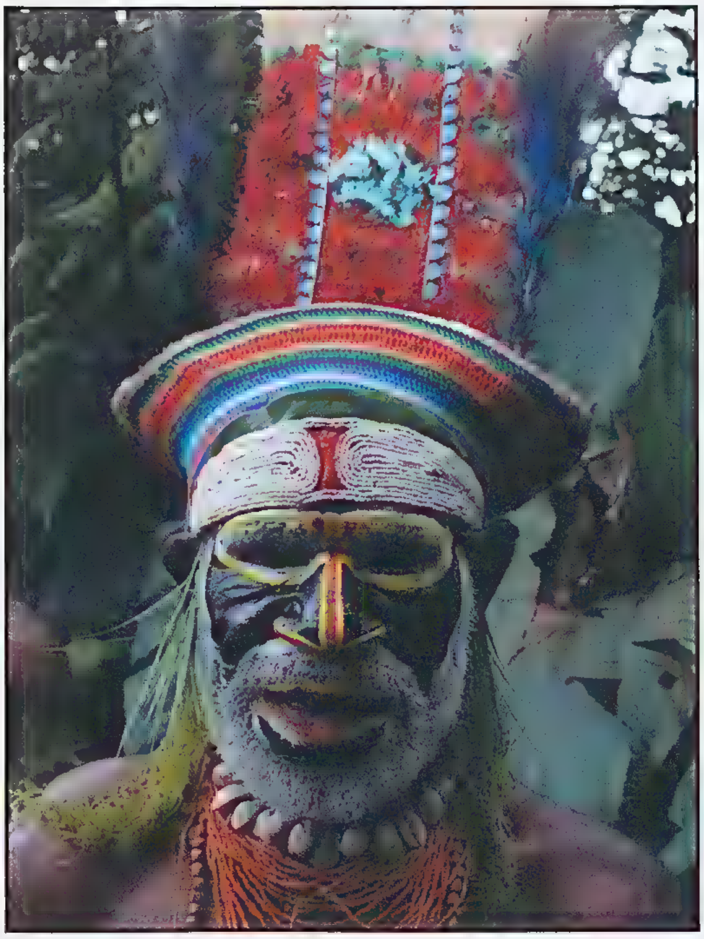
ORCHIDS AND TRAVEL IN PNG, BALI & SULAWESI 2009

Phil Ritchie

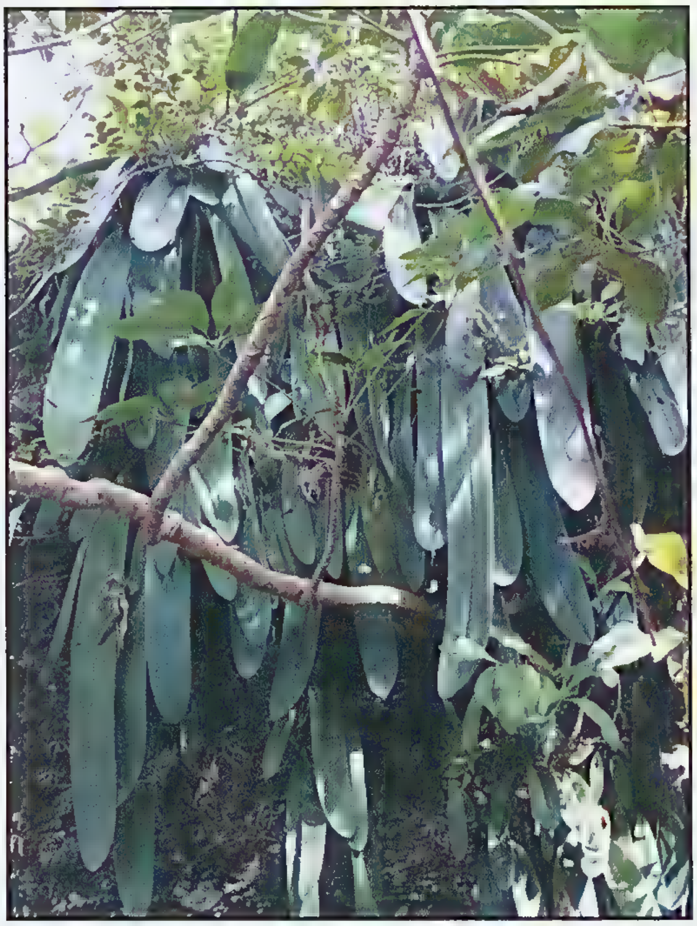
Ambua Lodge (2100m)



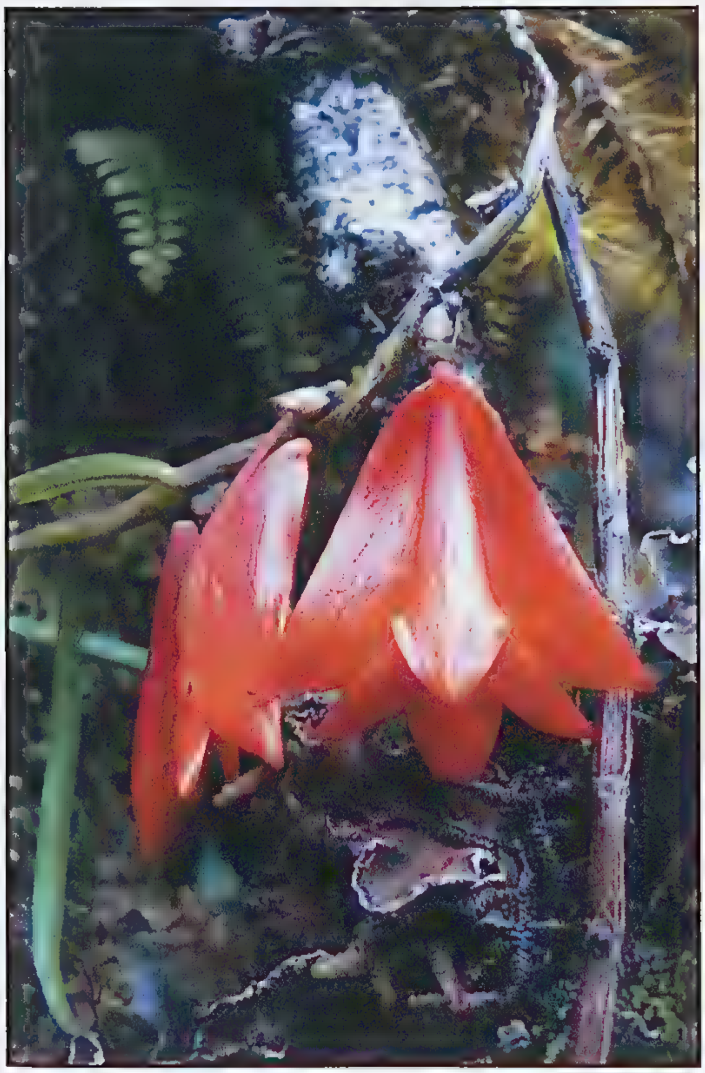
Pedilochilus sp.



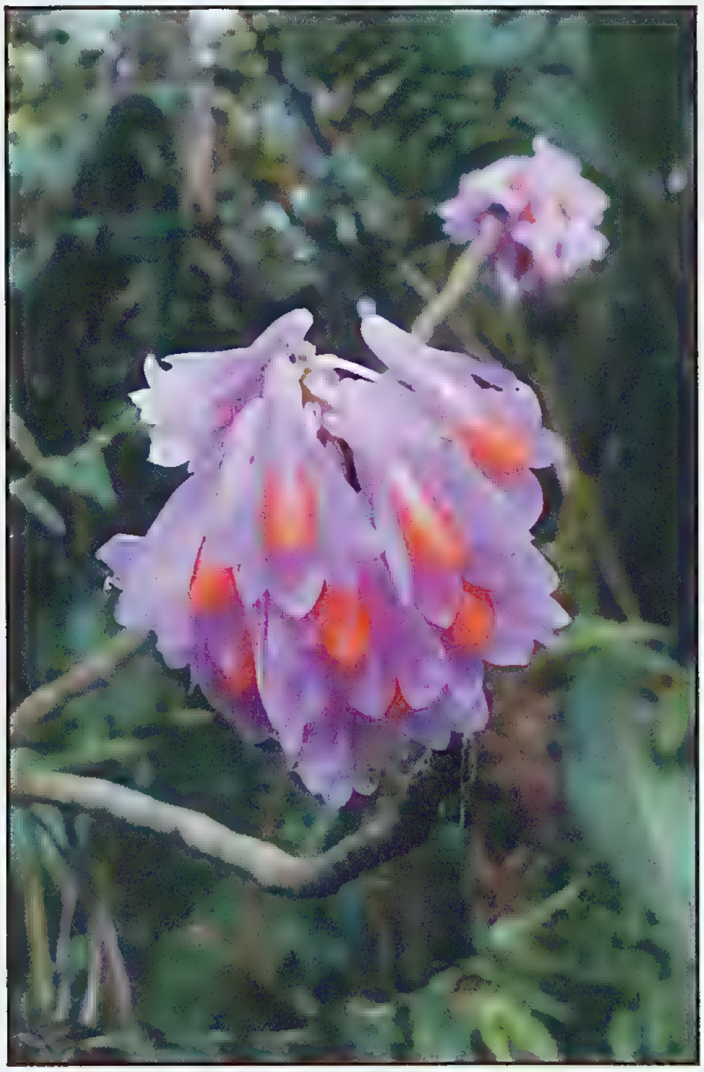
Tribal performance (Sing Sing)



Bulbophyllum fletcherianum



Den. habbenense



Den. pseudoglomeratum

When my wife Irene and I heard the previous year that this could be the last Phil Spence/Geoff Stocker escorted orchid trip to the highlands of PNG we decided we'd book in. As things have since developed there will be a trip this year to PNG following a different route taking in Madang province and including a visit to Bougainville – for details contact Niugini Holidays (see last section).

Our trip to PNG essentially followed that taken earlier for these trips (see Peter Presland 2004, 2007 and Lockrey, 2007) and was organized by Niugini Holidays, Cairns – 14 days; July 24th to Aug 6th. We subsequently went on another trip for most of October (Oct 6th to Oct 31st) to Bali (8 days) and south & north Sulawesi (17 days) where I also saw some more orchids.

Papua New Guinea

There were seven people on our trip (excluding Phil Spence & Geoff Stocker) as follows; Peter Presland, Warwick Biggs, Sue McNaughton, Barbara Richardson (all from NSW), Bob Cowie (from Vic) and ourselves. Our first 2.5 days were spent in the Port Moresby area and the highlight was the 6th International Orchid Spectacular – Orchids of SE Asia & PNG Art Exhibition at Parliament House. Phil and Geoff managed to get the group invitations to the Friday night pre-show reception where Michael Somare was in attendance. If only we could get such a high profile for one of our orchid shows! In common with other shows and the collections of private growers and nurseries that I have seen in the region (Indonesia and PNG), few if any plants in this show were labelled. While this is frustrating, it is perhaps a reminder that the beauty of the flowers is what really attracts people here – there is little interest in the botanical niceties!

The grand champion of the Show was *Bulbophyllum aristolabre* grown by Pint Kupal whose collection we were to see later in the trip. Many other beautiful plants were on display from a number of local growers as well as growers from Singapore, Thailand, Taiwan and China. On the Sunday we visited the nearby Rouna Falls area and a couple of spots near the Varirata National Park. The highlight for me was seeing *Bulbophyllum fletcherianum* in situ on rock faces by a creek bed in an area close to the national park entrance. While the plant we found in bloom was past its best (no rotten meat smell evident at this stage!) it was still a spectacular sight. Our South Yarra Botanic Gardens also has one of these plants and successfully flowered it back in 2002 (Ritchie, 2002 and p3 of The Age newspaper, 31/7/02). Following a quick, late lunch at the National Park lookout picnic area we returned via the Bomana War Cemetery to Port Morseby. Phil Spence then returned to Australia as the smallish size of our group meant that Geoff Stocker could easily handle our questions and travel needs for the remaining time.

The next day saw us on our 1h 20min flight to Tari (1700m altitude) in the southern highlands to the west. A 1-2h vehicle trip followed to get us to Ambua Lodge (at 2100m). A few excellent orchid trails have been established around the lodge which allow you to see a large number of endemic species easily. Our stay included a road trip to the nearby Tari Gap where we saw many orchids in the forest (mainly *Bulbophyllum* and *Dendrobium* species). I was particularly struck by the colour variations exhibited by a few species, *Dendrobium cuthbertsonii* being the most dramatic (ranging from white to yellow to red to purple with orange and brick colours thrown in for good measure – not to mention bicolour forms). For attractive colour combinations involving greens, browns and deep reds with lots of speckles thrown in the range of *Bulbophyllum* was hard to beat. I could go on. Andree Miller in her book (1999) has a number of excellent illustrations. I learnt that most of the highland species (ca 85%) are bird pollinated and as such are not scented (birds are attracted by colour, but have no sense of smell).

We quickly realized that the weather here was fairly predictable from one day to the next; clear to overcast in the morning with mists gathering late morning which develop into drizzle, then developing into often substantial rain late in the afternoon which may persist into the night. In short, nothing ever dries out; no wonder it is hard to reproduce these conditions in Melbourne! Temperatures while being around 20C in the middle of the day dropped to (I would estimate) around 5-8C at night. In short we did appreciate the wood fired heater at the lodge.

Following our 1.5 day stay at Ambua Lodge we transferred by chartered plane (35 min flight) to Mt Hagen township (1 day stay at the Highlander Hotel). Within the large hotel grounds were several highland orchid species in flower. During our stay here we visited Pint Kupal, the local collector who won the prize for champion at the Port Morseby Orchid Show (refer above). His large shadehouse and garden at the back of his home had many plants in bloom and the cameras were working overtime.

The next part of our trip was spent in the Tomba Pass area (3 days). Our accommodation was at Kumul Lodge (2100m) which was about 2h by road from Mt Hagen township. Again, very good orchid trails had been established around this lodge – none having done more than Max Mal; a local collector and nearby resident. The orchid trails which he has established around the lodge and at his separate family property at Enga village were resplendent with plants in flower.

The last part of our trip involved a 4 day stay at Betty's Lodge (3200m) close to Kegsugl and in the Mt Wilhelm area. While the road journey from Kumul Lodge to Kundiawa en-route was relatively straight forward; the last part (approx 45km) of the trip to Betty's Lodge was certainly a bumpy ride (impossible without the 4 wheel drive vehicles we were in). However, we made it and the beautifully cooked trout which Betty provided for dinner (from her trout farm) were very much appreciated. Betty Higgins certainly made sure our stay was most enjoyable. The highlights for me were our walks to the border between Simbu and Madang provinces and to the base hut at the foot of Mt Wilhelm. The latter was a one day activity; we started hiking at 6-45am and got up to the base hut on Lake Pindu (3960m) at 12-30pm; almost 6h – quite slow as we made frequent stops to photograph all the beautiful orchids we saw by the rainforest track. The morning is also the best time for photography. Toward the end of the climb the mists were closing in fast and the drizzle had started – very soon after our arrival at the base hut it just poured down. Our walk back (at a brisk pace) took 3h and in rain pretty much the whole time.

Our last day involved the 4 wheel drive trip back to Kundiawa where we got our flight back to Port Moresby. Following an excellent lunch at the Airways Hotel we caught our flight back to Brisbane to connect with our return flight back to Melbourne. Overall a wonderful trip.

Bali & Sulawesi

The first 6 days were spent in Bali (Ubud); Irene attended the Readers & Writers Festival while I, in the main, did other things. Concerning orchids, I had arranged with a local collector in the Bedugul area (Made Budarsa) to go with him into the bush to see some orchids in situ. I met Made through Neil van Alkemade who is an Australian, living in the same area as Made, and who is a member of ANOS (Vic). We had had the pleasure of meeting up with Neil and Made the previous year (2008). Made has a mixed collection of orchids including some indigenous species in a large shadehouse adjoining his home.

Made and I spent the best part of a day hiking to the top of a heavily forested hill beside Lake Buyan (more like a small mountain I thought – a good 1.5h climb before getting to see many orchids). While I didn't see many plants in flower I was particularly taken with what I did see. They were small flowered species; broadly similar to the type of plants I had seen in the highlands of PNG. I saw one *Calanthe* species, one scented *Eria* species and a few *Bulbophyllum* species. All in all a most interesting day. Irene and I then spent 17 days in south and north Sulawesi and again saw a number of orchid plants, but almost none in bloom. The interesting one for me was seeing what I believe was *Calanthe triplicata* at the top of Mt Tangkoko (1300m) in the Mt Tangkoko National Park which is directly west of the city Manado in north Sulawesi (about 160 km north of the equator). I had no idea this species was to be found in these parts.

All in all we thoroughly enjoyed both trips. However, if large *Cattleya* and *Cymbidium orchids* are your thing - all filled in to meet the judging criteria- then you wouldn't like the orchids of PNG or Bali! However, for colour, colour combinations, patterning and botanical interest and/or curiosity then you simply couldn't go past the plants we saw.

Information/References:

For information on the PNG orchid trip contact Karen Davidson or Jo Williams at Niugini Holidays Cairns Office, phone 07 4039-2251. E-mail : karen@nghols.com or jo@nghols.com

Lockrey, Arnold, 2007. 'Orchid Adventure in New Guinea' *Australian Orchid Review* 72, No 4 (Aug/Sept), pp4-18

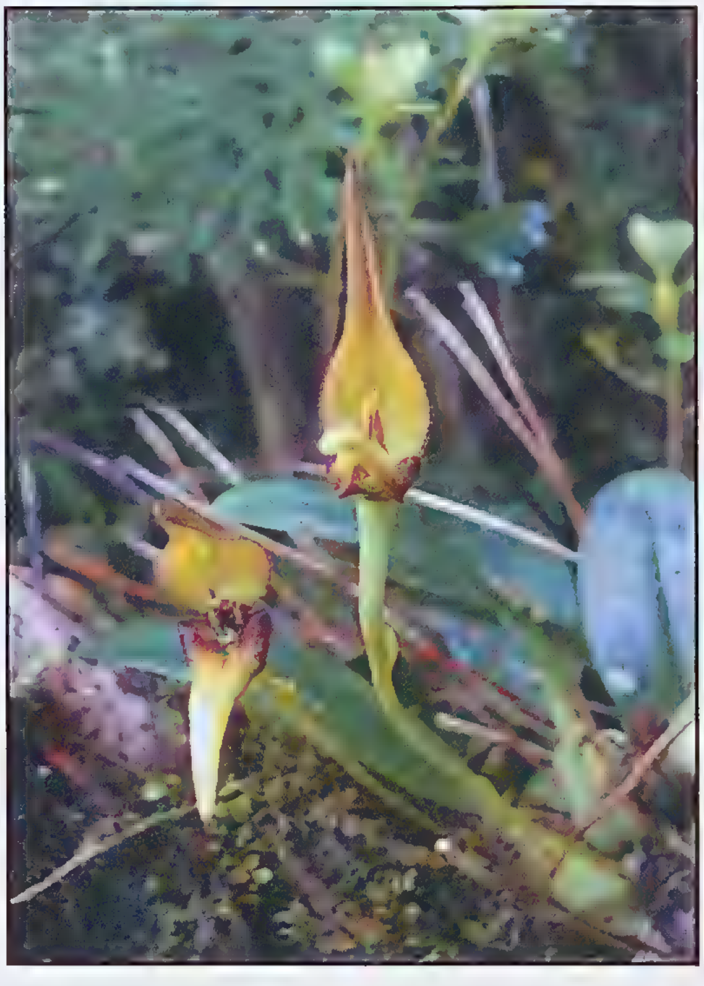
Millar, Andree, 1999 '*Orchids of Papua New Guinea*' Bathurst NSW: Crawford House Publishing Pty Ltd

Presland, Peter, 2004. 'Ethnobotany of Australasian Orchids' *The Orchadian* 14, No 9 (Sept), pp421-426

Presland, Peter, 2007. 'What an Adventure: An Orchid Tour of Papua New Guinea' *The Orchadian'* 15, No 8,(June 2007), pp358-366

Ritchie, Phil, 2002. '*Bulbophyllum fletcherianum'* ANOS (Vic) Bulletin, 35, No 3 (Sept), p11

All photographs -- Phil Ritchie



Bulbophyllum sp.

Additions to the Orchid Flora of the Solomons.

Paul Ormerod,
P.O. Box 8210, Cairns 4870, Queensland.
Email: wsandave1@bigpond.com

ABSTRACT: Three new taxa and one new record are proposed for the flora of the Solomon Islands. The new taxa are *Dendrobium isabelense, D. mohlianum* ssp. *kolombangaricum* and *Goodyera stenopetala* ssp. *rendovana. Liparis pedicellaris* is recorded from Guadalcanal for the first time

The orchids of the Solomon Islands were last treated by Lewis & Cribb (1991), they recorded 277 species (28 endemic) for the Solomons and Bougainville. Since the publication of their book there has been ongoing research (e.g. Ormerod 1995; 2009 and references therein) that has added to our knowledge of the flora of these islands. The new taxa described below were discovered as the result of herbarium studies undertaken at Harvard, Honiara and Kew.

Dendrobium Swartz

This is the largest genus in the Solomon Archipelago and it has about 51 species (nine endemic). Five of the endemic taxa belong to section *Grastidium* (Blume) Blume, the largest and most diverse group in the genus and well represented in nearby New Guinea. Identification of material from the Solomon Archipelago referrable to section *Grastidium* is currently difficult, I think in part due to a number of unidentified and undescribed taxa that have been mixed up with previously described species. I describe below one of these plants.

Dendrobium isabelense Ormerod, *sp. nov.*

Type: Solomon Islands – Santa Isabel, Sigana, 100 m, 11 January 1933, *L.J. Brass 3452* (Holotype: A!; Isotype: GH!).

Species nova subsimilis D. salomonense Schltr. *sed caulibus longioribus (3 vs. 1.5 m), sepalis ligulato-lanceolatis (non oblongis), carinis labello crasse lamellatis (non lato carinatis) et epichilo ovatis (non deltatis) differt.*

Epiphytic herb. Roots terete, to 1.5 mm thick. Rhizome very short. Stems pendulous, slender, subterete, leafy, to 3 m long, 0.30-0.35 cm thick.

Leaves lanceolate, thinly coriaceous, apex inequally subacutely bilobed, 7.30-11.45 cm long, 1.25-1.85 cm wide; leaf sheaths tubular, smoothly striate, truncate to obliquely truncate, 1.7-2.5 cm long. Inflorescence short, biflorous; inner spathe ca. 1 mm tall, 4 mm wide. Pedicellate ovary thickly clavate, glabrous, 5 mm long.

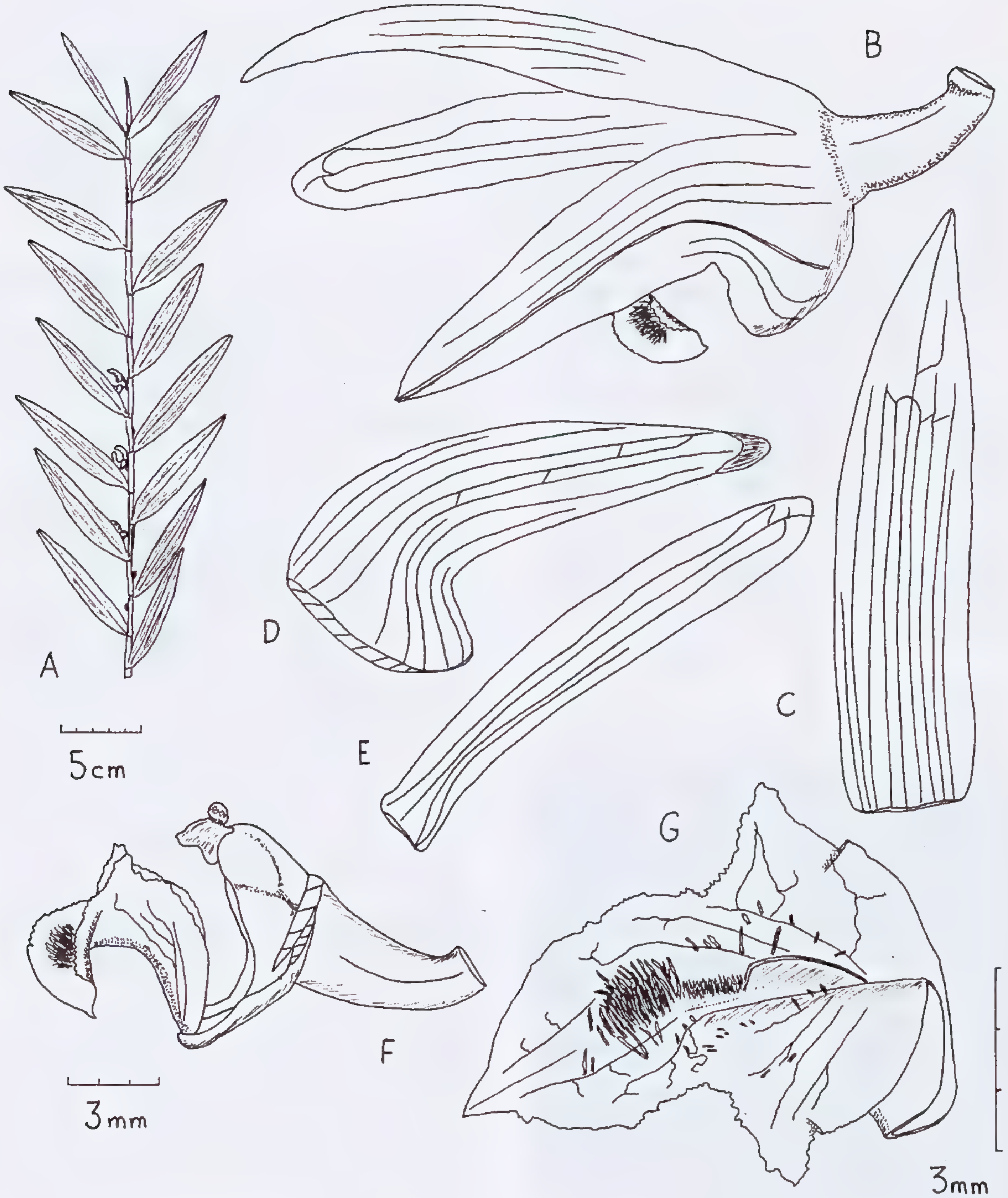
Flowers dull yellowish-brown, “pleasantly perfumed”.

Dorsal sepal ligulate, subacute, 9-veined, 17.5 mm long, 4 mm wide.

Lateral sepals obliquely ovate-lanceolate, apex obtuse and calceolate, 9-veined, 14.9 mm long, 6 mm wide basally, 4 mm wide in arch, forming with the columnfoot a mentum 3.3-4.0 mm long.

Petals linear-ligulate, obtuse, 5-veined, 15.95 mm long, 2.5 mm wide.

Labellum trilobed, curved, 8-9 mm long, medially with a thick lamellate keel that ends at the apex of the hypochile and dissolves into a patch of trichomes on the base of the epichile; hypochile



Dendrobium isabelense -- A. part of stem; B. flower; C. dorsal sepal; D. lateral sepal; petal; f. flower minus tepals; G. labellum. A, B-F and G to respective scales, A drawn from isotype, rest fom holotype.

flabellate, inside adorned with scattered papillae and trichomes, 4.7-5.0 mm long, 6.1 mm wide, at apex sidelobes deltate, irregularly dentate, acute; epichile broadly ovate, subacuminate, margin entire but becoming irregularly dentate toward the base, 4.2 mm long, 3.2-3.3 mm wide.

Column conical, 2.9-3.0 mm long; columnfoot forming an obtuse angle with the ovary, 3.5 mm long

Distribution: Solomon Islands.

Habitat: Lowland rainforest, 100 m.
This species is perhaps most similar to *D. salomonense* Schltr. but it differs from that in having longer (3 vs. 1.5 m) stems, dark drying leaves, flowers with ligulate-lanceolate (vs. oblong) sepals, a thickly lamellate (vs. low and broad) keel on the labellum hypochile, sidelobes with scattered papillae and trichomes (vs. transverse lamellae) and an ovate (vs. broadly deltate) epichile.

Dendrobium mohlianum Rchb.f. subsp. ***kolombangaricum*** Ormerod, *spp. nov.*

Type: Solomon Islands – Kolombangara, Mt. Kolombangara summit, 1065-1370 m, 31 August 1965, *P.F. Hunt RSS 2478* (Holotype: K!; Isotypes: AMES!, BSIP!).
Dendrobium mohlianum auct. non Rchb.f.: Lewis & Cribb, Orch. Solomon Isl. & Boug.:158, 160 p.p., f.35:A-L, 1991.
A D. mohliano Rchb.f. *ssp. mohliano mento floribus brevioribus (6.5-7.0 vs. 10-20 mm) differt.*

Epiphytic, rarely terrestrial herb. Stems caespitose, terete, leafy in upper half, 29.0-65.2 cm long, 0.3-0.4 cm thick; internodes to 3.5 cm long. Leaves ligulate-lanceolate, acute, thin, 7.0-12.5 cm long, 0.90-1.55 cm wide.

Inflorescences axillary on upper half of leafless stems, 4-6-flowered, 0.5-1.0 cm long; floral bracts broadly ovate, acute, 5-7 mm long, 4-5 mm wide. Pedicellate narrowly clavate, shallowly ribbed in upper half, 15-16 mm long.

Flowers orange, rich orange, red or orange-red, lip orange with violet or crimson, anther cap white. Dorsal sepal oblong-elliptic, subacute to obtuse, 11 mm long, 6 mm wide.

Lateral sepals obliquely ovate-elliptic, subacute, 11 mm long, 8 mm wide, forming with the columnfoot a mentum 6.5-7.0 mm long.

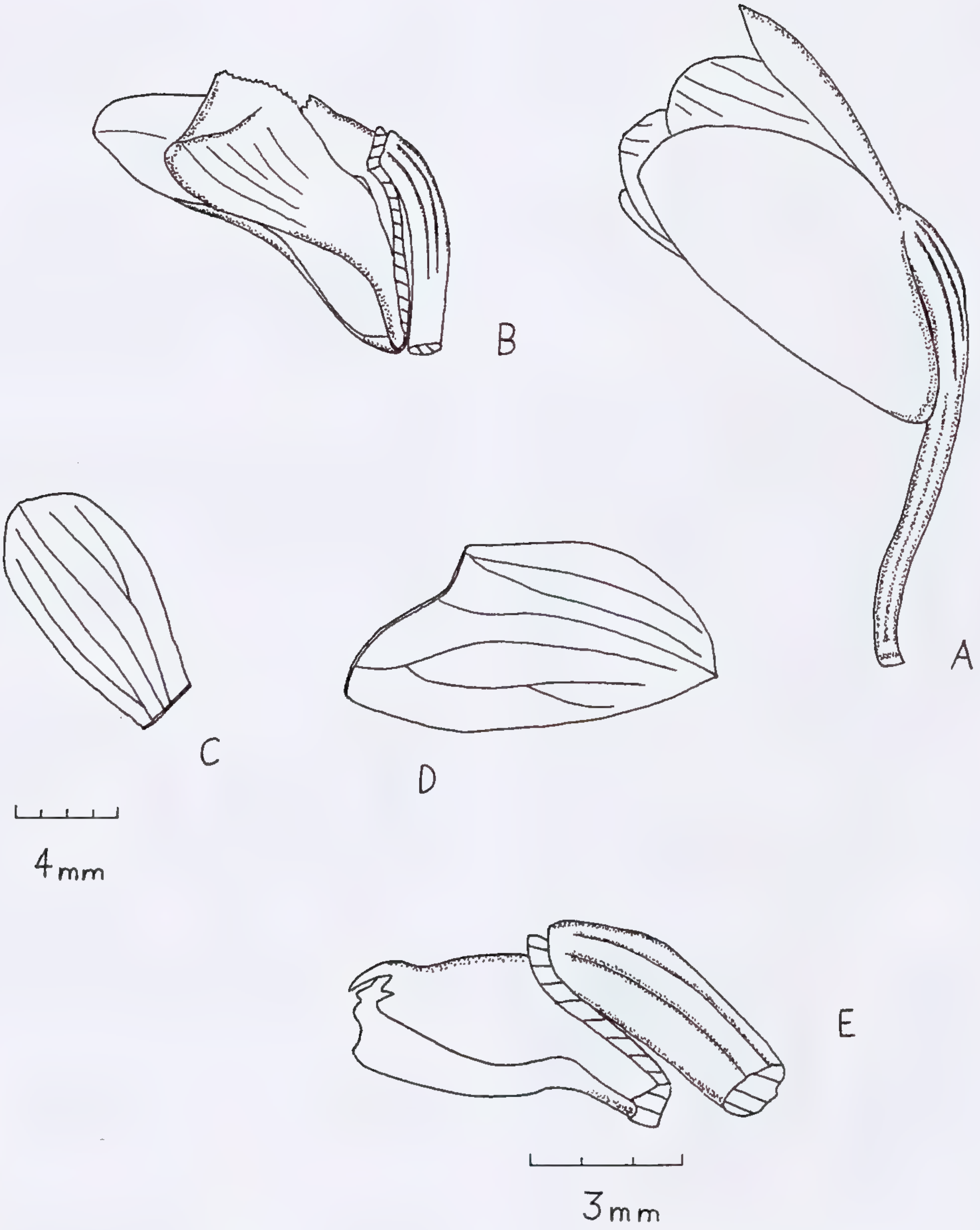
Petals obovate to elliptic, obtuse, 10 mm long, 5 mm wide.

Labellum obovate-cucullate, upper margin shallowly erose, lower half with margins connate to the columnfoot, apex exceeding the tip of the column (minus anther) by 3 mm, 11 mm long, 4 mm wide laterally,

Column semiterete, stelidia bidentate, 3.5 mm long; columnfoot 6.5-7.0 mm long.

Distribution: Solomon Islands.

Specimens examined: Solomon Islands – Kolombangara, Mt. Kolombangara, Vanga to summit track, 1000-1600 m, 3 November 1984, *P.J. Cribb & J. Campbell 5132* (K); summit Mt. Kolombangara, 1525 m, 31 August 1965, *P.F. Hunt RSS 2474* (K); Vanga Point track, 1400-1700 m, 31 October 1986, *S. Wickison 70* (K); above Vanga Mission Station, 1300 m, 1985, *G.*



Dendrobium mohlianum Rchb.f. subsp. ***kolombangaricum*** -- A. flower; B. flower minus tepals (except one lateral sepal); C. petal; D. lateral sepal; E. column. A-D and E to respective scales. Drawn from holotype..

Chaplin 825 (K); Rana Ridge, 1500-1700 m, 15 October 1986, *Mitchell 13* (K); Mt. Veve, Poitete track, 1300 m, 16 September 1991, *B.A. Lewis 57* (BSIP, K); W coast inland from Iri Iri Village at Meruso Cove, 915-1065 m, 27 September 1963, *T.C. Whitmore BSIP 2081* (BSIP, K).

This subspecies differs from typical *D. mohlianum* Rchb.f. in its flowers having a conspicuously shorter (6.5-7.0 vs. 10-20 mm) mentum. It is restricted to the island of Kolombangara. Typical *D. mohlianum* occurs further south in the Solomons on Guadalcanal and Makira.

Goodyera R.Br.

At least four species are known to occur in the Solomon Islands, these are *G. erythrodoides* Schltr., possibly the Vanuatu plant *G. inmeghema* Ormerod (sterile specimens from the Santa Cruz Islands), *G. rubicunda* (Blume) Lindl. and *G. viridiflora* (Blume) Lindl. ex D. Dietr. The fifth entity described below appears to be a subspecies of *G. stenopetala* Schltr., a taxon that occurs in Papua New Guinea, Bougainville and probably New Ireland.

Goodyera stenopetala Schltr. subsp. ***rendovana*** Ormerod, *ssp. nov.*

Type: Solomon Islands – Rendova, track from Ughele Village to Rendova Peak, 550 m, 12 September 1991, *B.A. Lewis 26* (Holotype: K!).

A G. stenopetala Schltr. *ssp. stenopetala petalis floribus oblongis (non ligulatis) et labello nudo (non glandulifero) differt.*

Erect terrestrial herb. Rhizome creeping, terete, rooting at nodes. Stem terete, laxly 6-leaved, 12 cm long, 0.2-0.3 cm thick; internodes 1.7-2.3 cm long. Leaves obliquely ovate, acute, green with a white stripe down the midvein, also with some obscure rather broad whitish reticulation, 2.25-3.20 cm long, 1.30-1.65 cm wide. Inflorescence pubescent, 9.5 cm long; peduncle 5.5 cm long; sheathing bracts 1-2, 1.1-1.3 cm; rachis laxly 10 or more flowered, 4 cm long; floral bracts lanceolate, acute, to 7.5 mm long, 2 mm wide. Pedicellate ovary cylindric-subfusiform, pubescent, to 8.2 mm long. Flowers externally pubescent, white, probably self-pollinating. Dorsal sepal ovate, acute, 4.3 mm long, 2 mm wide. Lateral sepals obliquely ovate, subacute, 4 mm long, ca. 1.8 mm wide. Petals oblong, subacute, 4 mm long, 1.0-1.1 mm wide. Labellum broadly ovate-elliptic, subacute, shallowly saccate, without internal appendages, 4 mm long, 2 mm wide. Column 1.8-2.0 mm long to tips of brachia, 2.5 mm long to tip of anther cap.

Distribution: Solomon Islands.

Habitat: Secondary forest, 550 m.

This apparent subspecies of *G. stenopetala* Schltr. differs from the typical entity in having oblong (not ligulate) petals and a shallowly saccate, eglandulate (not deeply saccate, glandiferous) labellum. It is possible that when further collections become available of subspecies *rendovana* that it will shown to be a semipeloric form of *G. stenopetala.*

Liparis L.C. Rich.

Only seven species are recorded from the Solomon Islands and none of these are endemic. Five of these taxa are epiphytic plants whilst two are rainforest floor terrestrials. The taxon reported on below belongs to the terrestrial group and had previously been misidentified as *L. chlorantha* Schltr.

Liparis pedicellaris Schltr., Repert. Sp. Nov. Regni Veg., Beih. 1:191, 1911.

Cestichis pedicellaris (Schltr.) M.A.

Clements & D.L. Jones, Orchadian 15, 1:39, 2005.
Type: Papua New Guinea – Mt. Gomadjidji, Waria River, 450 m, June 1909, *R. Schlechter 19913* (Holotype: B, destroyed).

Liparis pullei auct. non J.J. Sm.: Lewis & Cribb, Orch. Vanuatu:66, 1989.
Liparis orbiculata auct. non L.O. Wms.: Kores, Allertonia 5, 1:64 p.p., 1989; in A.C. Smith, Fl. Vitiensis Nova 5:394 p.p., 1991.
Liparis chlorantha auct. non Schltr.: Lewis & Cribb, Orch. Solomon Isl. & Boug.:96, 1991.

Distribution: Papua New Guinea; Solomon Islands; Vanuatu.

Specimens examined: Papua New Guinea – West Sepik Prov., Lumi District, Torricelli Mts., Lipan Pass, 800 m, 6 August 1981, *T.M. Reeve 4091* (K); Madang Prov., Karkar Island, 610-760 m, 15 January 1968, *C.E. Ridsdale 33971* (K).

Solomon Islands – Guadalcanal, Gold Ridge, on track to Mt. Chaunopaho, 1000 m, 26 October 1984, *P. Cribb, G.C. Dennis & J. Campbell 5096* (K); Gold Ridge, 650 m, cult. in Honiara, 12 February 1994, *G.C. Dennis s.n.* (K).

Vanuatu – Aneityum, behind Anelghawhat, track to Nwutia River, 100 m, 14 November 1989, *B.A. Lewis & J. McDonagh 195* (K); *sine loc.*, 210 m, 19 February 1990, *J. Wheatley 804* (K). Tanna, June 1978, *P. Morat 6034* (P n.v., photocopy/sketch K). Vanua Lava, Toulap Mt., above Sola, 540 m, 13 July 1989, *J. Wheatley 491* (K); Mt. Wensaoro, 400 m, 26 October 1989, *B.A. Lewis & J. Mc Donagh 119* (K).
Examination of material identified as *L. chlorantha* by Lewis & Cribb (1991) shows the specimens cited to represent *L. pedicellaris.* The latter species was to be expected in the Solomons since it was also recorded (Yukawa & Hashimoto 1989) from Vanuatu where it had been confused with *L. orbiculata* L.O. Wms. and *L. pullei* J.J. Sm. These two entities have leaves articulated with the sheath whilst *L. pedicellaris* does not, although the flowers are superficially similar. Futhermore *L. pullei* is still only known from Indonesian Papua and *L. orbiculata* is so far only found on Makira in the Solomons and Fiji (it is not yet found in Vanuatu).
Studies of the specimens cited above show the labellum to be slightly variable in shape and size.

Acknowledgements.

I wish to thank herbarium and library staff at AMES, BSIP and K for their help and hospitality during my visits. Jeff Wood (K) kindly made some additional checks on material held at Kew.

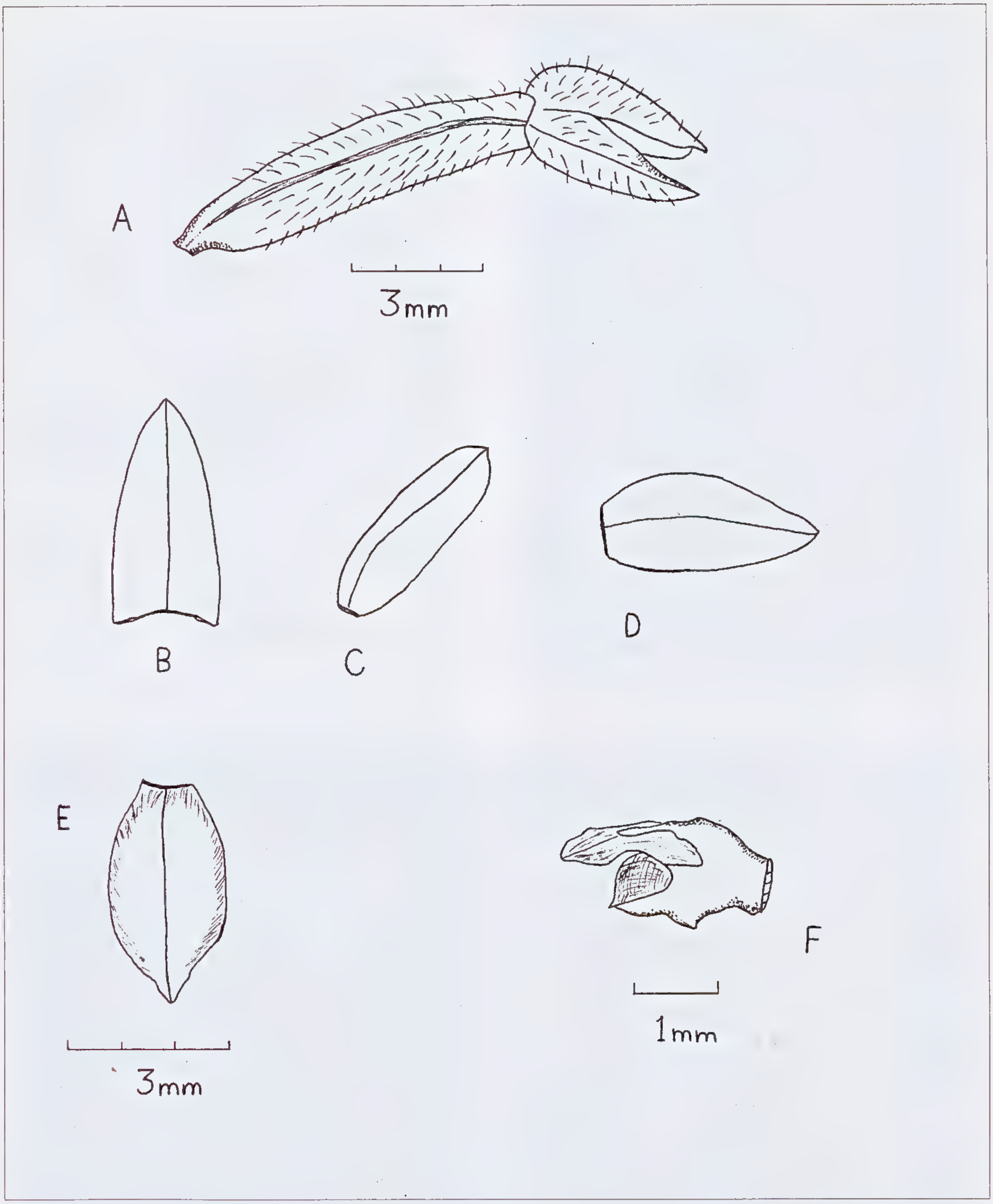
Literature Cited.

Lewis, B.A. & Cribb, P.J. 1991. Orchids of the Solomon Islands and Bougainville. RBG Kew.

Ormerod, P. 1995. Complementary Studies of Solomon Archipelago Orchids. Austral. Orch. Review 60, 2:35-39.

Ormerod, P. 2009. Additions to the Orchid Flora of Bougainville. Orchadian 16, 6:273-281.

Yukawa, T. & Hashimoto, T. 1998. Studies of the Orchid Flora of Vanuatu: I. Contributions to the Flora of Vanuatu: 63-67.



Goodyera stenopetala Schltr. subsp. ***rendovana*** -- A. flower; B. Dorsal sepal; C. petal; D. lateral sepal; E. labellum. A, B-E and F to respective scales.
Drawn from holotype..

LOSING THE PLOT

To put it mildly this article has been difficult to begin, will be quite obvious to a few people and I hope will make others stop and think about some of their practices.

When I was asked to undertake the job of National Conservation Officer I accepted without too much hesitation as I had in the previous few years become involved in conservation issues in general and at that time had begun to explore more of my local area than at any time previously. This came about as my interest in photographing orchids increased and each time I ventured to an area where I had not been before or at a different time of the year, I quickly realised the variety of land forms available locally, the species contained within and the availability and population densities (or lack thereof) of some of these species. However, over time and particularly in 2010, certain features have become apparent which are delicate but need to be made more public, as an awareness factor rather than a particular bent against any person or agency.

The first of course has been mentioned before and that was the sale of terrestrial orchids on EBay. Any orchid grower with a modicum of knowledge would have made the (correct) assumption that the plants were being accessed from a source other than normal propagation methods. Through extensive contact with the Queensland Department of Environment and Resource Management (DERM), this practice has ceased.

Another instance is more recent and also concerns the sale of native orchids on EBay. In this instance the seller is using NPWS tags but these are not tags from the state in which the orchids are being sold. Some tags are from another state but some of the orchids sold are from a third state. If it sounds complicated it probably is and to think a retailer without any permit of any type is selling native orchids in one state, most of which were collected from a second state, using tags from the second state but also using those tags on orchids from a third state with two species only available in the third state. The retailer is using a collector from the second state but none of the tags used are of the current issue and their legality must be in question.

Also of concern is a report of epiphytic species being sold at meetings, shows and some other events which may indicate collection and not propagation. Collection is legal and permits etc are readily available to the right people but one would hope some of these plants would come from hand pollination, which would provide a quantity of plants for an indefinite period.

Further to this is another report of large scale collection of a notoriously difficult to propagate epiphytic species also being sold bare root. This species apart from being difficult to propagate has an unreliable capsule production and slow growth habit, features which make it a tempting target for an unconscionable retailer. Again one would hope line breeding of legally obtained selected plants would be preferable to wholesale collection and the practice of under the table retailing or at venues away from the possibility of oversight by authorities.

Finally, following a report I noticed an exhibit at an orchid show my initial thoughts were, how the owner obtained the plant, as it is a nationally listed endangered species which does not reproduce vegetatively but requires a pollinator for reproduction. As it turns out information indicates the plant was part of a rescue operation a decade ago and at that time considered to be a variety of another endangered species. That in itself promotes further questions, which would still apply given the situation of the first species. Was a relocation considered, if not why not and was any consideration given to the possibility of further scientific study of the then unnamed species? I have seen the information applicable to the plant ownership and at the time it would have been considered sufficient, however with full knowledge of the population numbers and distribution of the plant, my personal feelings are that the plant should not be publically exhibited. Few members of the public and indeed the general orchid fraternity would have been aware of the rarity and sensitivity of the plant at the time but public exhibition can lead to awkward questions being asked and I do not feel society members exhibit plants for this reason.

See ptoto of *Thelychiton falcorostrus* [*Dendrobium falcorostrum*] back page.

Alan W Stephenson
National Conservation Officer
Australasian Native Orchid Society (ANOS) affine@tpg.com.au

Pterostylis saxicola

Thelychiton speciosus [*Dendrobium speciosum*] Photo Alan Stepehenson

DIRECTORY OF A.N.O.S. GROUPS (& Associated Societies)

NEW SOUTH WALES

- **ANOS Central Coast**, P.O. Box 3010, Erina 2250. (02) 4343-1809. Meetings 8pm, 2nd Wed. each month. Narara Community Centre, 2 Pandala Road, Narara. 2250
- **ANOS Far North Coast**, P.O. Box 949, Ballina 2478. (02) 6686-6303. Meetings 7.30pm, 3rd Fri. each month. C.W.A. Room, River Street, Ballina.
- **ANOS Illawarra**, 2 Wiford St, Corrimal, 2518. (02) 4284-8308. Meetings 7pm, 2nd Tue. each month. Figtree Community Hall, Figtree Park, Figtree.(next to Westfield Figtree Shopping Centre)
- **ANOS Macarthur & District**, 43 Strickland Cres, Ashcroft, 2168. (02) 46 818589. Meetings 8pm, 3rd Thur. each month. Narellan Community Hall, Queen St., Narellan.
- **ANOS Mid-North Coast**, 69 The Lakes Way, Forster 2428. (02) 6554-9733. Meetings 12 noon, last Sunday each month followes by BBQ. (Held at Taree or Wauchope - phone Secretary for details).
- **ANOS Newcastle**, P.O. Box 4021, Rathmines 2283. (02) 4975-3729. Meetings 7.30pm, 4th Thur. each month. John Young Community Hall, Thomas St, Cardiff.
- **ANOS Sydney**, 22 Rabaul Ave, Whalan. (02) 8824 6338. Meetings 8pm, 3rd Fri. each month. Senior Citizens Hall, Baulkham Hills Community Centre (off Conie Ave.) Baulkham Hills.
- **ANOS Warringah**, P.O. Box 421, Forestville 2087. (02) 9943 0474. Meetings 8pm, 3rd Tue. each month. Community Hall, Starkey St., Forestville.

NEW ZEALAND

- **ANOS New Zealand Native Orchid Group**, 22 Orchard St., Wadestown, Wellington, New Zealand.
- **New Zealand Native Orchid Group**, 22 Orchard St., Wadestown, Wellington, New Zealand.

QUEENSLAND

- **ANOS Beenleigh**, PO Box 1130 Beenleigh QLD, 4207. (07) 3841 3330. Meetings 7.30 1st Thursday each month Showground Hall, James St. Beenleigh.
- **ANOS Gold Coast**, P.O. Box 472, Biggera Waters Qld 4126. Meetings 1.30pm on the last Sunday of the month. Southport Community Centre, Lawson St, Southport.
- **ANOS Kabi**, PO Box 424, Aspley 4034. (07) 3359-5752 Meetings 7.30pm, 2nd Tue. each month (except Jan.). Bald Hills Memorial Hall, 2126 Gympie Rd., Bald Hills.
- **ANOS Mackay & Dist.**, PO Box 138, Koumala, 4738. (07) 4950-1065. Meetings 7.30pm, 2nd Thursday of each month at the Andergrove Community Centre, Celeber Drive, Andergrove.
- **ANOS Townsville**, 92 Curie St, Wulguru, 4811. (07) 4778-4311. Meetings 8pm, 1st Tue. each month. Townsville Orchid Society Hall Joe Kirwan Park cnr Bamford Lane and Charles Street Townsville..
- **Native Orchid Society of Toowoomba**, P.O. Box 2141,Toowoomba 4350. Meetings 7.30pm, 1st Fri. each month. Luthern Church Hall, Cnr. West and Alderly Sts, Toowoomba.

SOUTH AUSTRALIA

- **Native Orchid Society of South Australia**, P.O. Box 565, Unley 5061. (08) 8294 8014. Meetings 8pm, 4th Tue. each month. St. Matthews Hall, 67 Bridge St., Kensington.

VICTORIA

- **ANOS Geelong**, 2 Cooper St, Melton South 3338. (03) 9743 6040. Meetings 7.30pm, 2nd Wed. each month. Uniting Church Hall, Moorabool St., South Geelong.
- **ANOS Victoria**, P.O. Box 345, Carlton North 3054. (03) 9387-2771. Meetings 8pm, 1st Fri. each month. Meetings at the Toorak Uniting Church Hall, 603 Toorak Road, Toorak. (Melways 58, K4)
- **ANOS Melbourne Suburbs Group**, PO Box 169, Bayswater Vic. 3153. 0419720355. Meetings held on the 4th Wednesday of the month at 7.30pm at Montrose Primary School, Leith Rd., Montrose 3765 (Melways 52 D7)

WESTERN AUSTRALIA

- **ANOS Western Australia**, 27 Maidment Parade Dalyellup WA, 6230. 041 9901 335. Meetings 8pm, 2nd Mon. each month. Wilson Community Hall, Braibrise Rd., Wilson.

TRANSLOCATION OR DEATH

(Or are they the same?)

Alan Stephenson

Those who regularly read this magazine would be aware of my activities and my efforts regarding certain orchid species. One species in particular, *Calochilus pulchellus* (Pretty Bearded Orchid) was the focus of my attention in the latter half of 2007. Numerous events transpired (or is that conspired) to defeat all efforts a small number of this species had made to survive, however long it had been surviving, without any interference from humans. The chain of events which led to its demise are not uncommon but must be understood by those (including me) who recognise what must be done to afford any rare orchid the level on conservation it requires. These events were; the development of its habitat as a residential sub-division; the fact consent had been given to the development before the orchid was discovered on the site, with a further period of time before it was relieved of the burden of being *Calochilus* sp. aff *grandiflorus* and formally described and named as *Calochilus pulchellus,* plus the writing of a submission to have it recognised as an endangered species (21 months) and only then one realises the precarious position of this and many other orchid species.

There are at best 32 individuals of this species known to occur and to lose even one or two must be considered alarming, given that their flowering habit is not regular and while not essential, is enhanced by fire. Whether fire is necessary for seed production, dispersal or simply a means to free individual plants from possible competition and obstruction from nearby species of shrubbery, is as yet unknown and with funding shortfalls for environmental programs this information is likely to remain so indefinitely.

The translocation imposed upon the plants in 2007 was unfortunately a hurried action, entered into without much planning as to where the plants might be situated. However several nearby locations were selected and the job was completed within a day. To give the orchids some chance of survival they were hand watered on several occasions with water from my rain water tank about 30 km away in Nowra. The first year saw one plant flower of the seven removed but the second year two other individuals managed to flower and my hopes were raised with the possibility of some success.

Unfortunately in the third year the single plant, which was growing in a stump, was found to be missing and I feel the activity I noted from ants in and around the stump that its support base had been undermined and the plant was lost. Of the plants relocated I thought this plant which had suffered less human interference would survive.

Owing to continuing work in the immediate are with the second stage of the sub-division and the services easement near where the plants were relocated, access was not always available or easy and my recent checks in the first week of October 2010 found no trace of any survivors. The barriers erected at the time of relocation to prevent animal access to the area immediately surrounding each plant were still there, although interwoven with grasses and small shrubs. At first I thought a resident kangaroo had managed to lean in and nibble a plant or two but as I noted several plants of *Calochilus paludosus* nearby I accepted this was not the case and as the *C. paludosus* were substantial plants

Calochilus pulchellus habitat prior to relocation

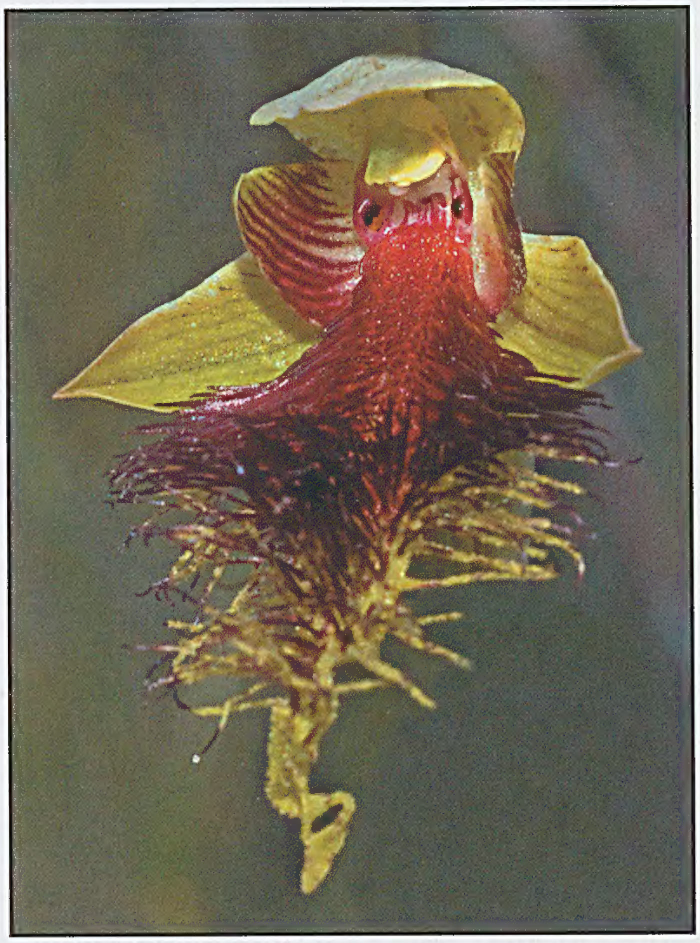
Calochilus pulchellus relocation site

with each supporting eight flowers, I considered these very noticeable plants would perhaps have been more obvious targets.

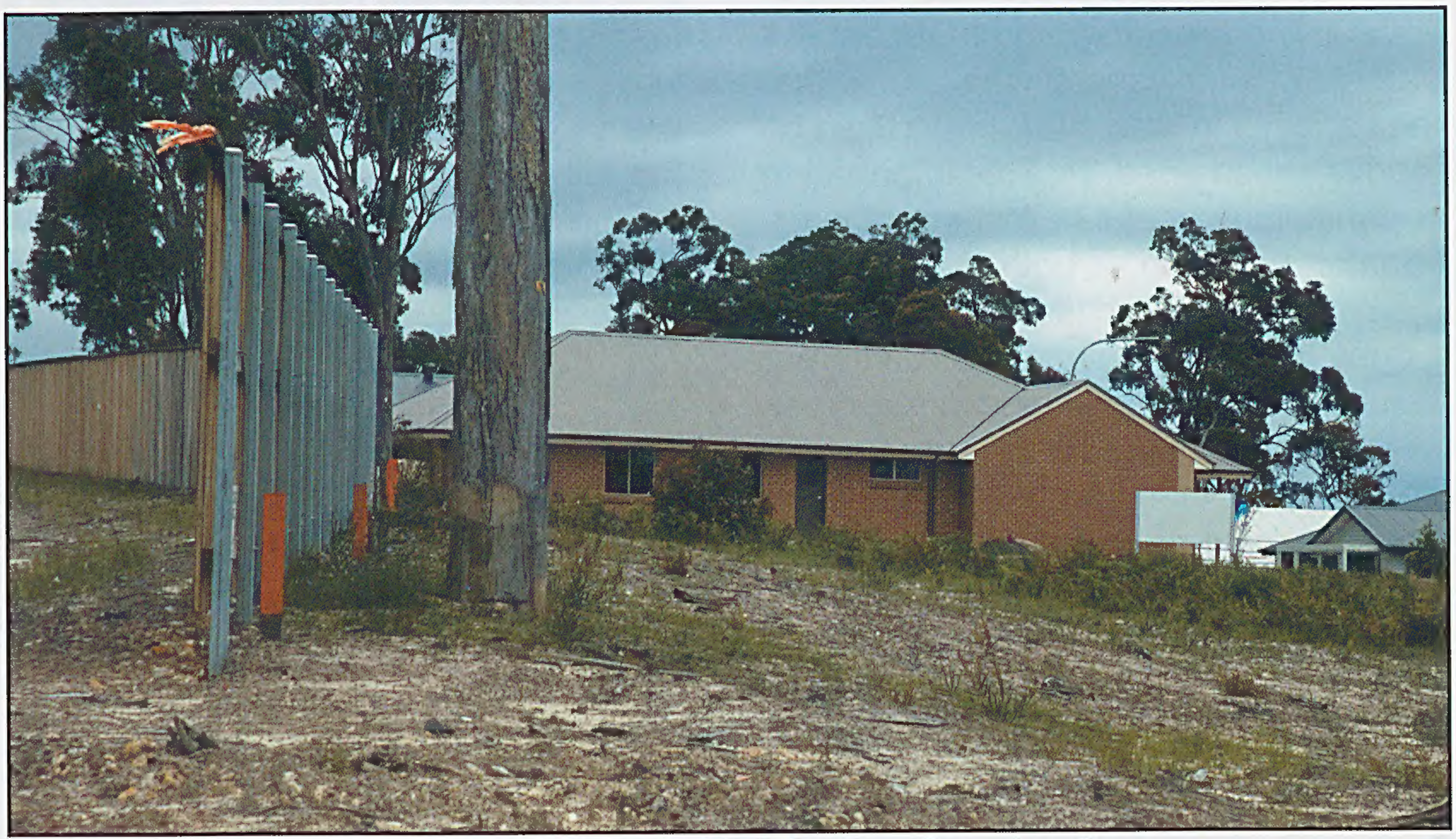
Despite the great disappointment at losing these plants, I intend to turn the situation into a positive by impressing on the federal and state environment bodies the difficulties inherent in translocation of orchids, in particular, those with the obvious fungal and habitat preference requirements of *C. pulchellus*.

Just when you might think all of the above is depressing, there are now eight new plants (as of 29/10/2010) to replace those lost to the translocation. These were found by two people known to me (in 2008) and at the time there were six plants. The couple are not involved with orchids but general bush care work and the location of these plants is known to few people will remain that way, as their situation is at the moment reasonably secure and indications are it cannot form part of a development. Silver linings do occur.

Alan W Stephenson
National Conservation Officer
Australasian Native Orchid Society (ANOS)
affine@tpg.com.au



Calochilus pulchellus.



Calochilus pulchellus habitat 3 years after relocation
All Photos Alan Stephenson

Progress with *Dendrobium speciosum* Varieties Register

I have received a number of responses to the request to provide information for the register of *D. speciosum* cultivars, and have also obtained some details from award records and nursery catalogues, and so far my list contains 379 entries, of which I have no varietal information for only 35. The list contains 5 var. *blackdownense*, 4 var. *boreale*, 15 var. *capricornicum*, 84 var. *curvicaule*, 62 var. *grandiflorum*, 10 var. *hillii*, 30 var. *pedunculatum*, 91 var. *speciosum* and 43 intervarietal crosses of which I have information about the parents for 32. Of the entries, 97 of the plants have received awards: 22 ANOS awards, 47 AOC awards, 17 OSCOV awards and 11 AOS awards. The awards comprise 20 cultural awards, 44 HCCs, 30 AMs, 1 FCC, 1 AD and 1 CHM.

The primary purposes of the register are to provide information as to the botanical variety of the single-variety plants of *D. speciosum* in cultivation, either wild-collected or the result of infra-varietal line breeding, and to record the parents of inter-varietal cultivars so that the varieties in their background can be readily ascertained. This information is particularly useful in respect of inter-varietal breeding, both for growers meeting a show schedule and for the judges judging the show. A different result would be expected from a cross between var. *speciosum* and var. *grandiflorum* than from a cross between var. *curvicaule* and var. *speciosum*, or between var. *curvicaule* and var. *pedunculatum.*

Though as much detail as possible about the area where plants were collected, and by whom, is welcome and would provide an interesting historical record, there are good reasons why people might be reluctant to provide precise dates and locations. Our orchids are protected and have been for many years and it is illegal to collect them from the bush without a licence. However even general information as to the location where the plants originated would be useful, particularly considering the extensive range of some varieties. Where plants were collected in accordance with a licence or on the collector's property, we welcome full details.

Another aspect of interest is the reason for the names given to particular plants, and contributors are invited to include that information.

Many of the well-known plants used in hybridising were collected 30 or more years ago, and those who collected them are getting on in years and some are no longer with us. Once they are gone their knowledge will be gone, too, and, as with family history, it is important to obtain and record that knowledge while we can.

We have not yet settled the form in which the information will be made available on the web site, but at this stage we invite you to supply as much information as possible about the plants.

Roslyn Capell
P.O. Box 1549, Ballina,
NSW, 2478
capell666@ozemail.com.au

The Australasian Native Orchid Society Inc.

ABN 88 676 231 296
P.O. 318 Willoughby, N.S.W. 2068 AUSTRALIA.

Back Issues Available:
(Some issues of 12 and 13 only have 2 or 3 copies left)

Volume 12 – Issues 1, 2, 5, 6, 7, 9, 10, 11	**$3 ea.**
Volume 13 – Issues 1, 2, 3, 5, 6, 7, 8, 9, 10, 11,	**$6 ea.**
Volume 14 – Issues 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11,	**$8 ea.**
Volume 15 – Issues 1, 2, 3, 4, 5, 6, 7, 8, 9,	**$8 ea.**

Also Available:

DRAWINGS
Superb colour prints of J.J. Riley's drawings on Australian Native Orchids are now available:

Set 1 – $15.00
Pterostylis maxima, Dipodium variegatum, Pterostylis daintreana, Pterostylis grandiflora, Cryptostylis erecta, Genoplesium filiforme, Diuris lanceolata, Rimacola elliptica.

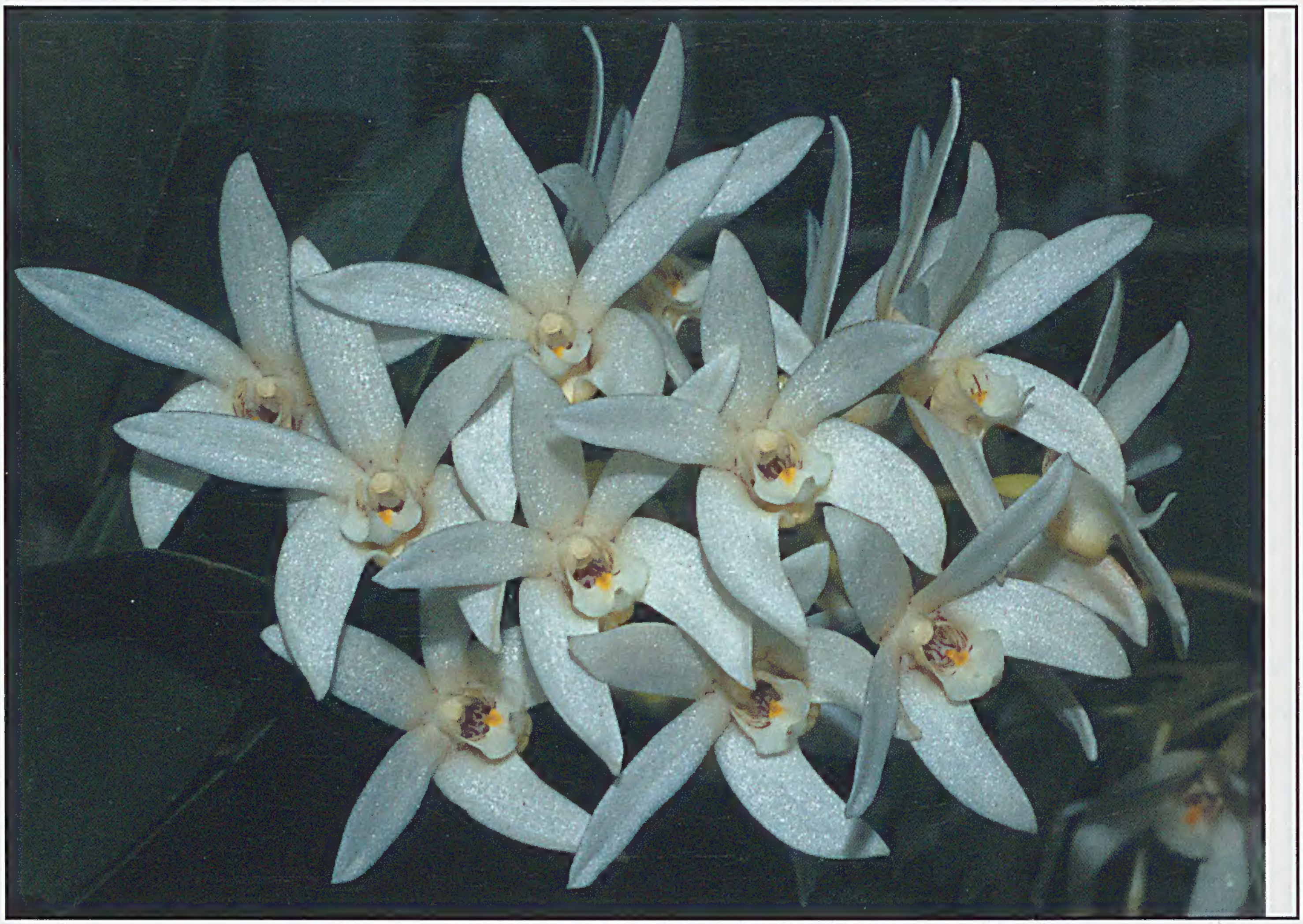
Set 2 – $15.00
Pterostylis sanguinea, Pterostylis depauperata, Acianthus caudatus, Caladenia concinna, Chiloglottis truncata, Dendrobium kingianum, Sarcochilus australis, Dendrobium striolatum.

Set 3 – $15.00
Dendrobium moorei, Lyperanthus nigricans, Dendrobium bowmanii, Eriochilus cucullatus, Pterostylis vittata, Sarcochilus ceciliae, Sarcochilus falcatus, Cymbidium canaliculatum.

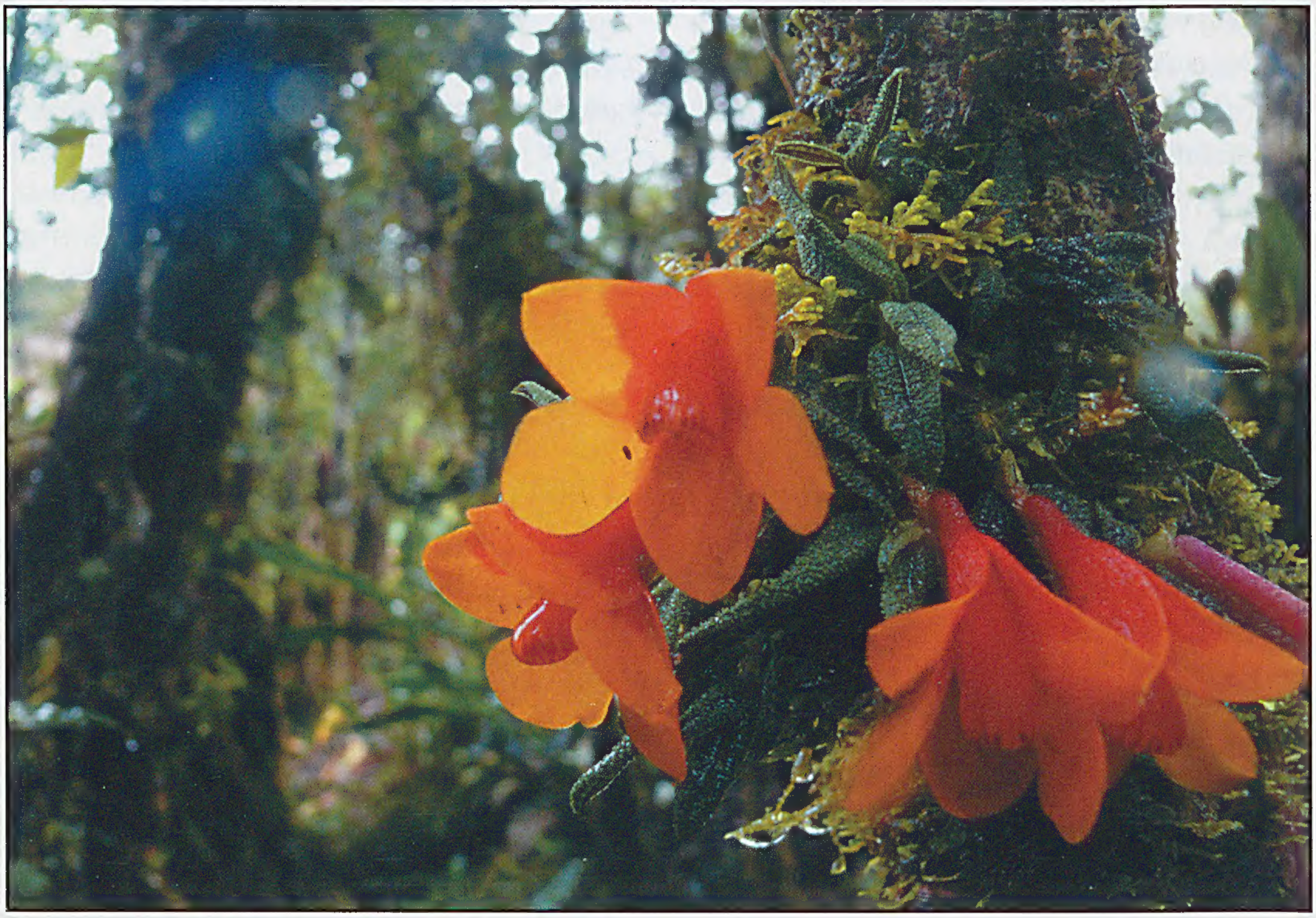
ANOS Awards CD -- $20.00 + postage
The CD contains award pictures and fact sheets for each award.

Checklist of Australian Native Orchid Hybrids
The Checklist will be available in the new year

Ian Chalmers
Editor, The Orchadian.



Dendrobium falcorostrum Photo - Alan Stephenson



Dendrobium cuthbertsonii Photograph Phil Ritchie